

Morphology of Zihuateutla Totonac

by

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ABSTRACT

This dissertation presents a description of the morphology of Zihuateutla Totonac (ZT), a member of the Northern branch of the Totonacan (Totonac-Tepehua) language family. Zihuateutla Totonac is spoken by about 1,100 people in the town of Zihuateutla in northern Puebla State, Mexico. Previous to this study, ZT had no documentation of its linguistic features and its relationship to other languages in the family was poorly understood. This research is a description of the linguistic properties of ZT based on a documentation project conducted between 2013 and 2017. The outcome of this project includes a phrasal and textual corpus, a lexical database in Totonac with Spanish and English translations, and a description of the morphology of the language. This dissertation presents an overview of the phonemic inventory, basic syntactic structures, and an illustration of the main word classes and grammatical categories. The greater part of this thesis involves a discussion of the morphological patterns of verbs and nouns. Of typological importance is the highly polysynthetic and agglutinating verbal morphology of ZT, which encodes categories for inflection and derivation. Nouns, adjectives, and adverbs also show unique semantic and morphological properties. The analysis takes a form-based approach to the linguistic description proceeding in the direction from form to function, showing regular and compositional patterns and then idiosyncratic or lexicalized expressions. The thesis adds to the empirical database used for ascertaining the dialectological relation of Zihuateutla to other languages in the Northern branch for which there is documentation and forms the basis of a linguistic record for typological studies and future scholars in linguistics and allied disciplines.

Preface

This thesis is an original work by Michelle Garcia-Vega. The research project, of which this thesis is a part, received research ethics approval from the University of Alberta Research Ethics Board, Project title “Documenting Zihuateutla Totonac and neighboring Totonacan communities”, No. Pro00040831, October 9, 2013 and Project title “Documenting Zihuateutla Totonac”, No. Pro00062137, February 10, 2016.

Dedication

This thesis is dedicated to my mother, Lilyan M. Garcia-Vega, who witnessed its completion from above and to my husband, Conor Snoek, and son, Marlow León Snoek, who supported me through the years and beyond.

“Beware of the conceit of analyzability.” – Sally A. Rice

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Table of Contents

List of Figures	xiii
List of Abbreviations.....	xiv
1 Introduction	1
1.1 Totonacan Language Family.....	3
1.2 The Community of Zihuateutla.....	11
1.3 Fieldwork and Methodology	13
1.4 Totonacan Linguistic Literature	18
1.5 Structure of the Dissertation.....	24
2 Phonology.....	27
2.1 Phonemic Description	27
2.1.1 Consonants.....	32
2.1.1.1 Stops	32
2.1.1.2 Fricatives	34
2.1.1.3 Affricates	37
2.1.1.4 Nasals.....	38
2.1.1.5 Approximants	40
2.1.1.6 Rhotic Tap/Flap	42
2.1.2 Vowels	42
2.2 Stress	47
2.2.1 Nouns.....	48
2.2.2 Adjectives, Adverbs, and Ideophones	51
2.2.3 Verbs.....	53
2.3 Phrase-level Prosody	54
2.3.1 Phonological Junctures	54
2.3.2 Phrase-final Devoicing/Elision.....	57
2.3.3 Affix-shifting.....	58
3 Grammatical Preliminaries	62
3.1 Overview of Nouns and Verbs.....	63
3.2 Basic Syntactic Structures.....	70
3.2.1 Constituent Order	75
3.2.2 Copula Clauses	78
3.3 Other Lexical Classes.....	81
3.3.1 Adjectives	82
3.3.1.1 Adjectival Plural	85
3.3.1.2 Determinative	86
3.3.1.3 Deverbalizer on Adjectives.....	87
3.3.1.4 Semblative	88
3.3.1.5 Derived Adjectives with Body-part Terms.....	90

3.3.2	Adverbs.....	92
3.3.2.1	Ideophones.....	95
3.3.2.2	Deictic Adverbs.....	104
3.3.3	Body-part Terms.....	107
3.3.3.1	Body-part Terms in Locative Expressions.....	113
3.4	Grammatical Word Classes.....	119
3.4.1	Pronouns.....	119
3.4.2	Demonstratives.....	122
3.4.3	Numerals and Numeral Classifiers.....	125
3.4.4	Negative Particle.....	133
3.4.5	Interrogatives.....	134
3.5	Subordinators.....	138
3.5.1	Relative Pronouns.....	139
3.5.2	Complementizers.....	142
3.5.3	Subordinating Adverbial Particles.....	145
4	Nouns.....	152
4.1	Structure of the Noun Phrase.....	152
4.2	Noun Inflection.....	154
4.2.1	Number.....	155
4.2.2	Possession.....	158
4.2.3	Determinative.....	163
4.3	Noun Derivation.....	166
4.3.1	Deverbalizers on Nouns.....	166
4.3.2	Agentive.....	181
4.3.3	Place.....	182
4.3.4	Derived Nouns with Body-part Terms.....	184
4.3.5	Compound Nouns.....	188
5	Verb Inflection.....	191
5.1	Participant Marking.....	193
5.1.1	Subject.....	194
5.1.2	Object.....	204
5.1.3	Double Object.....	210
5.2	Aspect, Tense, and Mood.....	213
5.2.1	Aspect.....	216
5.2.1.1	Imperfective.....	218
5.2.1.2	Perfective.....	229
5.2.1.3	Progressive.....	238
5.2.1.4	Perfect.....	247
5.2.2	Tense.....	255
5.2.2.1	Present.....	258
5.2.2.2	Past.....	259
5.2.2.3	Future.....	263
5.2.3	Mood.....	265

5.2.3.1 Indicative	269
5.2.3.2 Optative	269
5.2.3.3 Potential	272
5.2.3.4 Irrealis	275
5.3 Stative Verbs	278
5.3.1 Ordinary Stative Verbs	278
5.3.2 Stative Posture Verbs.....	281
5.4 Voice	292
5.4.1 Indefinite Subject.....	294
5.4.2 Indefinite Object/Antipassive	301
5.4.3 Reciprocal	307
6 Verb Derivation	310
6.1 Valency-changing Affixes.....	311
6.1.1 Causatives	314
6.1.1.1 Causative Circumfix	314
6.1.1.2 Stimulus	322
6.1.2 Applicatives	325
6.1.2.1 Dative.....	325
6.1.2.2 Instrumental	334
6.1.2.3 Comitative	343
6.1.2.4 Allative	346
6.1.3 Decausative.....	347
6.1.4 Alienative.....	351
6.1.5 Derived Verbs with Body-Part Terms	354
6.2 Adverbial affixes	363
6.2.1 Intensifier.....	370
6.2.2 Path	372
6.2.3 Roundtrip	373
6.2.4 Ambulative	374
6.2.5 Repetitive.....	376
6.2.6 Totalitative.....	378
6.2.7 Deictic affixes.....	380
6.2.8 Desiderative	383
7 Conclusion	387
7.1 Summary of Research and Typological Generalizations	387
7.2 Limitations and Future Research.....	394
References	398

Appendices

Appendix A: Archive of Textual and Audio Data.....421
Appendix B: Minimal and Near-Minimal Pairs in ZT424
Appendix C: List of derivational affixes and some of their functions in ZT427
Appendix D: Summary of linguistic features shared by ZT and the Mesoamerican
linguistic area.....428
Appendix E: Sample of Texts.....429

List of Tables

Table 1: ZT Consonant Inventory	29
Table 2: ZT Vowel Inventory	30
Table 3: ZT Ideophones.....	101
Table 4: ZT Deictic Adverbs	105
Table 5: ZT Body-part terms in independent and combining forms with literal and extended senses.....	111
Table 6: ZT Personal Pronouns	120
Table 7: ZT Possessive Pronouns.....	121
Table 8: ZT Demonstratives	122
Table 9: ZT Numerals.....	126
Table 10: Numeral Classifiers (origin and classification)	131
Table 11: Interrogative Pronouns	135
Table 12: A full possessive paradigm for <i>chik</i> ‘house’	159
Table 13: Subject markers	194
Table 14: Subject markers on the Class 1 verb <i>ma:ska:kí:</i> ‘dry out’ across the four aspectual categories	195
Table 15: Second-person singular subject forms for Class 1, 2, and 3 verbs <i>taxtú</i> ‘leave’, <i>tuks-</i> ‘hit’, and <i>laqtzin</i> ‘see’	199
Table 16: Second-person singular suppletive subject forms for <i>tamá:</i> ‘lie down’, <i>a'n</i> ‘go’, <i>min</i> ‘come’, and <i>li:mín</i> ‘bring something’	203
Table 17: Object markers for all verb classes.....	204
Table 18: Object marking (in bold) for the verb <i>tu'ks-</i> ‘hit’	207
Table 19: Multiply ambiguous verb forms in person-number marking	210
Table 20: Combinations of Tense, Aspect and Mood in ZT	215
Table 21: Aspectual paradigms for imperfective intransitive dynamic verbs for Class 1, 2a/b, and 3 stems <i>taxtú</i> ‘leave’, <i>pax-</i> ‘bathe’, <i>kalhwán</i> ‘cry’, and <i>wa'yán</i> ‘eat _{INTR} ’	219
Table 22: Imperfective transitive dynamic verb forms, Class 1 (<i>mu'sú</i> ‘kiss’).....	223
Table 23: Imperfective transitive dynamic verb forms, Class 2 (<i>tuks-</i> ‘hit’)	224
Table 24: Imperfective transitive dynamic verb forms, Class 3 (<i>laqtzin</i> ‘see’)	225
Table 25: Aspectual paradigms for perfective dynamic intransitive verbs for Class 1, 2a/b, and 3 stems <i>taxtú</i> ‘leave’, <i>pax-</i> ‘bathe’, <i>kalhwán</i> ‘cry’, and <i>wa'yán</i> ‘eat _{INTR} ’	230
Table 26: Perfective transitive forms, Class 1 (<i>mu'sú</i> ‘kiss’).....	234
Table 27: Perfective transitive forms, Class 2 (<i>tuks-</i> ‘hit’).....	235
Table 28: Perfective transitive forms, Class 3 (<i>laqtzin</i> ‘see’).....	236
Table 29: Dynamic intransitive progressive aspectual paradigms for Class 1, 2a/b, and 3 stems <i>taxtú</i> ‘leave’, <i>pax-</i> ‘bathe’, <i>kalhwán</i> ‘cry’, and <i>wa'yán</i> ‘eat _{INTR} ’	239
Table 30: Transitive progressive dynamic paradigm, Class 1 (<i>mu'sú</i> ‘kiss’).....	241
Table 31: Transitive progressive dynamic paradigm, Class 2 (<i>tuks-</i> ‘hit’)	242
Table 32: Transitive progressive dynamic paradigm, Class 3 (<i>laqtzin</i> ‘see’)	243
Table 33: Aspectual paradigms perfect intransitive dynamic verbs for Class 1, 2a/b, and 3 stems <i>taxtú</i> ‘leave’, <i>pax-</i> ‘bathe’, <i>kalhwán</i> ‘cry’, and <i>wa'yán</i> ‘eat _{INTR} ’	248
Table 34: Perfect dynamic transitive forms, Class 1 (<i>mu'sú</i> ‘kiss’)	250
Table 35: Perfect dynamic transitive forms, Class 2 (<i>tuks-</i> ‘hit’).....	251
Table 36: Perfect dynamic transitive forms, Class 3 (<i>laqtzin</i> ‘see’).....	252
Table 37: Present, past, and future tense (<i>taxtú</i> ‘leave’)	256

Table 38: Possible combinations of tense and aspectual morphology	257
Table 39: Mood paradigms (<i>taxtú</i> ‘leave’)	268
Table 40: Irrealis mood paradigms in ZT for the past, present, and future	275
Table 41: Stative base, inchoative, and causative forms for six ZT stative verbs	279
Table 42: Person paradigms for stative posture verbs	281
Table 43: Stative transitive paradigm (<i>a'klhwí</i> ‘be sitting on top of something’)	283
Table 44: Dynamic forms of posture verbs derived with the inchoative prefix <i>ta-</i> in the imperfective aspect	285
Table 45: Stative and dynamic forms of verb formatives (<i>wi:</i> ‘sit’)	286
Table 46: Indefinite voice: person and number of imperfective and perfective aspect...295	
Table 47: Causative (CS) forms with the circumfix <i>ma:- -ni:</i>	316
Table 48: Causative forms with the circumfix (CS) <i>ma:- -V:</i>	317
Table 49: Lexically-conditioned causatives (CS) with the circumfix <i>ma:- -V</i>	319
Table 50: Causative forms with the stimulus (STM) prefix <i>maq-</i>	323
Table 51: Dative verb stems with an applied object expressing BENEFICIARY and RECIPIENT	328
Table 52: Dative verb stems with an applied object expressing an ADDRESSEE.....	329
Table 53: Dative verb stems with an applied object expressing MALEFICIARY	330
Table 54: Dative verb stems with an applied object expressing a STIMULUS	331
Table 55: Dative verb stems with an applied object expressing an EXPERIENCER	331
Table 56: Dative verb stems with an applied object expressing other semantic roles	333
Table 57: Instrumental verb stems that take an applied object expressing an INSTRUMENT or REASON	340
Table 58: Instrumental verb stems that take an applied object expressing other semantic roles	342
Table 59: Comitative verb stems that add an applied object expressing a co-AGENT	344
Table 60: Allative verb stems with <i>la'q-</i> that have applied object expressing GOAL	347
Table 61: Decausative verb stems with <i>ta-</i>	350
Table 62: Alienative verb stems with <i>maq-</i> that have an implied third person participant	353
Table 63: Valency-increasing verb stems with alienative <i>maq-</i> with applied objects expressing other semantic roles.....	353
Table 64: Intensifier verb stems with <i>lak-</i>	371
Table 65: Distal forms of <i>taxtú</i> ‘leave’	381
Table 66: Archive of textual and audio data.....	421

List of Figures

Figure 1: Map of Totonacan languages and language divisions	4
Figure 2: Traditional classification of Totonacan languages.....	6
Figure 3: Classification of the Totonacan language family.....	8
Figure 4: Classification of Central Totonac based on lexical similarity	10
Figure 5: Zihuateutla and neighboring communities.....	12
Figure 6: Idealized verb template in ZT	68
Figure 7: Order of inflectional affixes in relation to the verb root	192
Figure 8: Order of affixes for agreement, TAM, and voice	293
Figure 9: Idealized order of valency-changing affixes as integrated with the inflectional affixes detailed in Chapter 5	313
Figure 10: Idealized order of adverbial affixes as integrated with valency-changing affixes in Chapter 6 and inflectional affixes in Chapter 5	365

List of Abbreviations

–	affix boundary	PLC	place
=	clitic boundary	POSS	possessive
≡	phonological juncture	POT	potential
1, 2, 3	first-, second-, third-person	PRDUP	partial reduplication
ADD	additive	PRES	present
AGT	agentive nominalizer	PRN	pronoun
ALN	alienative	PROG	progressive
ALL	allative	PRT	partonym
AMB	ambulative	PRX	proximal
AP	antipassive voice	PST	past
APL	adjectival plural	PTCL	particle
CLF	classifier	QTV	quotative
CMT	comitative	RCP	reciprocal
CNN	connective	RDUP	reduplication
CNTR	container	RPT	repetitive
COL	collective plural	RT	roundtrip
CS	causative	SEM	semblative
DAT	dative	SG	singular
DCS	decausative	ST	stative
DIST	distal	STM	stimulus
DSD	desiderative	SUB	subject
DTV	determinative	TOT	totalitative
DVB	deverbalizer	VBL	verbalizer
FUT	future	AP	Apapantilla Totonac
HREL	human relative pronoun	UNT	Upper Necaxa Totonac
IDF	indefinite voice	ZT	Zihuateutla Totonac
IDPH	ideophone		
IND	indicative		
IMPF	imperfective		
INCH	inchoative		
INST	instrumental		
INTJ	interjection		
INTNS	intensifier		
JNCT	juncture		
LOC	locative		
NEG	negative		
NREL	non-human relative pronoun		
NUM	numeral		
OBJ	object		
OPT	optative		
PATH	path		
PF	perfect		
PFV	perfective		
PL	plural		

1 Introduction

Totonacan (Totonac-Tepehua) languages, spoken in east-central Mexico, constitute one of the largest linguistic families in Mesoamerica, although limited documentation is available on many varieties. Zihuateutla Totonac (ZT), a member of the Totonacan family spoken by about 1,100 speakers in Puebla State, Mexico, is a case in point having no previous description of its linguistic properties prior to this thesis and its relationship to other languages in the family being poorly understood. Until recently, the only existing documentation of ZT was a questionnaire intended to investigate the dialectological variation of the Totonacan languages conducted with responses from one speaker in 2004. ZT has no ISO number and it is misclassified as a dialectal variant of Xicotepec de Juarez Totonac (also known as, Apapantilla Totonac (AT), ISO 639-3 tot) in *Ethnologue* (Eberhard, Simons, and Fennig 2020). The misclassification stems from a lack of documentation, which forms a gap in our knowledge about internal relations and typological properties among Totonacan languages.

This dissertation presents a synchronic description of the grammar of ZT, in particular the formal and functional properties of nouns and verbs. Nouns and verbs in ZT show some interesting morphological features that could be relevant for typological studies of these lexical classes. Nouns have no case or noun class agreement and are optionally marked for plurality, expressing what Corbett (2000) refers to as “general number”. In possessive constructions, nouns inflect for person of possessor and are optionally marked for number of possessor following a head-marking pattern. A subclass of nouns referred to as body-part terms are highly polysemous with meanings related to anatomy, which are semantically extended to express parts of an object, spatial relations, case roles, and are used in numeral classification. Body-part terms are widespread and have independent and bound forms, the latter of which combine with nouns, verbs, adjectives, and adverbs to form new stems that perform a wide range of functions.

Of further typological importance is the highly polysynthetic and agglutinative nature of the Totonacan verb that uses a combination of prefixing and suffixing for derivation and inflection. Verbs in ZT are therefore complex, encoding information for tense, mood,

aspect, voice, and person and number of subject and object(s) following a nominative-accusative pattern. Verbs are formally divided into two major classes, dynamic and stative, based on their inflectional morphology. Dynamic verbs constitute a large open class of verbs that take the full range of aspectual inflections, while stative verbs represent a small, closed class that do not vary in aspect. A subclass of stative verbs express posture and configuration and are used in a variety of spatial, conventional, and lexicalized expressions. In discourse contexts, two voices, the indefinite and antipassive, are marked on the verb stem and function to suppress the expression of an event participant. The language makes use of a wide variety of verbal derivational affixes, both causatives and applicatives, as well as an array of affixes that have meanings related to aspect and mode, or spatio-temporal senses which modify the verb stem but do not express obligatory categories.

This detailed description of the morphology of Zihuateutla Totonac is based on a language documentation project I carried out in the community between 2013 and 2017. The data for this project were collected in collaboration with twelve speakers in the Totonacan community of Zihuateutla. The outcomes of this documentary effort are audio recordings and a textual and lexical database in Totonac with Spanish and English translations, and a preliminary account of the grammar of the language. While the bulk of the dissertation focuses on the morphology of nouns and verbs, the linguistic properties of the main word classes (nouns, verbs, adjectives, and adverbs) are described as well as a number of grammatical classes (pronouns, demonstratives, numerals, interrogatives, negation, and subordinators). The thesis draws from examples that were elicited formally and from participant interviews, staged events, and naturally occurring speech from narratives and discourse. The variety of elicitation methods has provided valuable information for describing grammatical properties including the phonemic inventory, phonological processes, morphophonemic patterns, morphological paradigms, and functional analyses embedded within a more usage-based approach. The morphological analysis is form-driven, presenting the structural characteristics of a particular category and then providing a functional account of its formal features. Proceeding in the direction from form to function, the morphological description first demonstrates regular and compositional patterns and then presents idiosyncratic or lexicalized expressions. Throughout this thesis, the presentation emphasizes language-particular details that set ZT

apart from other languages in the Totonacan family and around the world.

This project was carried out in order to contribute to the documentation of a previously undescribed language and to add to the body of knowledge of Totonacan linguistics, creating a reference source for linguistic scholars. In each section, I briefly note categories that have cognate forms and cross-linguistic differences between Zihuateutla and languages in the family for which there is sufficient documentation. This dissertation provides a linguistic source of information for further research on the language and for comparative typological or historical studies. The information herein may also be used for the development of pedagogical grammars or other educational materials.

The remainder of this chapter is organized as follows. I first present some background on the Totonacan language family, its geographical location, genetic relations, and the historical-comparative literature (see §1.1). The community of Zihuateutla, an estimation of the number of speakers and general geographic and socio-cultural information are briefly described in §1.2. Information about language consultants, my field sessions, and methodology used to collect data, as well as the general theoretical orientation behind the analysis I propose in this thesis are described in §1.3. A review of earlier documentary work and descriptions of the Totonacan languages is given in §1.4. The structure of the dissertation can be found in §1.5.

1.1 Totonacan Language Family

Totonacan (Totonac-Tepihua) languages are spoken by about 240,000 speakers living in the eastern Sierra Madre of the Central Gulf Coast of Mexico (INEGI 2010). Totonacan languages are spread throughout the northern region of Puebla State and contiguous northwestern states of Veracruz and the southeastern part of Hidalgo (see Figure 1).



Figure 1: Map of Totonacan languages and language divisions (courtesy of David Beck) The light grey ellipses represent sub-groups within the Totonacan family; the dark grey ellipses represent close dialectal variants of a language.

Totonacan has traditionally been considered a linguistic isolate, although possible links to Mixe-Zoquean and Mayan languages of southern Mexico have long been postulated (Belmar 1910, Whorf 1935, McQuown 1942, 1956; Swadesh 1954, 1961; Greenberg 1987). Some linguists have even expanded this Mixe-Zoquean-Mayan-Totonacan hypothesis to include other macro-families in the Mesoamerican region. Witkowski and Brown (1978: 943) tentatively include Huave, Lencan, and Jicaque as part of a super phylum they call “Southern Mesoamerican.” Witkowski and Brown (1978) further suggest that most of the languages of Mesoamerica (Mayan, Zoquean, Huave, Totonacan, Lencan, Jicaque, and Otomanguean) descended from one proto-language “Mesoamerican”. These early proposals, however, were not based on extensive comparative evidence. Brown et al. (2011) is the first study to offer comparative evidence for the Totonacan-Mixe-Zoquean hypothesis, or “Totozoquean” as they call it, based on sound correspondences and

lexicostatistical methods. A possible phylogenetic link between Totozoquean and Chitimacha, a language once spoken in southern Louisiana, has also been suggested in Brown et al. (2014), which hypothesizes that Chitimacha people migrated northward from Mexico (Brown et al. 2014: 34). Despite criticisms of these hypotheses (Mora-Marín 2016: 172; Campbell 2016: 129-30), and however speculative, the pursuit of this knowledge is important in better understanding the culture, history, and migratory paths and homelands of the Totonacan peoples.

The Totonacan language family is divided into two main branches, Totonac and Tepehua.¹ The Totonac branch of the family is spoken in northern Puebla State and parts of the state of Veracruz. The Tepehua branch consists of three languages, Tlachichilco, Pisaflores, and Huehuetla Tepehua, all of which are spoken in northeastern states of Veracruz and Hidalgo. The division between Totonac and Tepehua has been fairly easy to establish on phonological, lexical, and morphosyntactic grounds (McQuown 1940, Arana Osnaya 1953, García Rojas 1978, Watters 1988, MacKay 2011, Beck 2014, MacKay & Trechsel 2015, 2018a,b). The two branches are distinguished by the correspondence between a series of ejectives or glottalized stops and affricates preceding plain vowels in the Tepehua branch and laryngealized vocalic phonemes following plain obstruents in many of the languages in the Totonac branch. The debate surrounding the reconstruction of Totonacan includes disagreements related to the phonological inventory of Proto-Totonacan. MacKay and Trechsel (2018a,b) propose that Proto-Totonacan contains a set of glottalized stops and affricates but no laryngealized vowels, while Brown et al. (2011) and Watters (2018) propose a set of modal and laryngealized vowels from which the glottalized consonants developed. Davletshin (2016, 2018, 2019a,b) additionally proposes a series of glottalized stops, affricates, and sonorants in addition to modal and laryngealized vowels in Proto-Totonacan.

¹ It is important to note that the Instituto Nacional de Lenguas Indígenas (INALI) also proposes a classification for the Totonacan (Totonac-Tepehua) languages, however, this classification is based on the geography of where the languages are spoken as opposed to the classifications proposed here which are based on linguistic features. The classification proposed by INALI suggests a division between the Totonac and Tepehua branch. The Totonac branch according to this classification is divided into: Southeast Totonac, North-central Totonac, Upper-central Totonac, Coastal Totonac, Necaxa River Totonac, South-central Totonac, and the Tepehua branch into: South Tepehua, North Tepehua, and West Tepehua.

While the initial split between Totonac and Tepehua is undisputed, the relations between the languages in the Totonac branch remain unresolved (MacKay & Trechsel 2006, 2014, 2015, 2018a,b; Davletshin 2008, Brown et al. 2011, 2014; Beck 2014). Totonac had been traditionally divided into four branches: Misantla, Northern, Sierra, and Lowland. Misantla Totonac is geographically an outlier spoken in southeastern Veracruz and is the most easily distinguished branch (MacKay 1999, MacKay & Trechsel 2005). The other three branches, Northern, Sierra, and Lowland (or Papantla), are mostly spoken in northern Puebla and parts of Veracruz. Figure 2 shows the traditional classification of the Totonacan language family. This traditional classification, however, is largely based on small dialectological surveys of only a few of the languages or the impressions of linguists working in the area (MacKay & Trechsel 2015, Beck, p.c.). One of the first reconstructions of the language family by Arana Osnaya (1953), for example, was based on the phonology of three Totonac varieties and one from Tepehua.

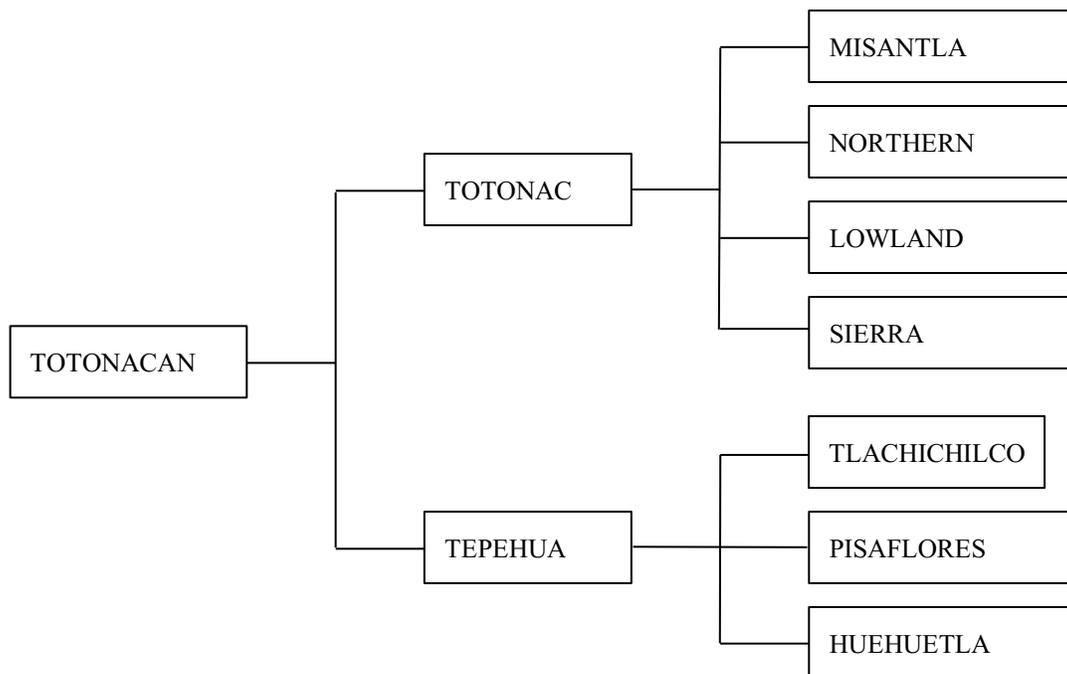


Figure 2: Traditional classification of Totonacan languages (MacKay and Trechsel 2015)

The debate surrounding the traditional classification in Figure 2 involves the relations

between the languages in the Totonac branch.² A split between Northern-Sierra versus Lowland, for instance, is suggested in García Rojas (1978). The branching of Northern versus Lowland-Sierra is postulated by Aschmann (cited in Ichón 1969) and Davletshin (2008). Brown et al. (2011, 2014) propose a Central branch that is also split into Northern and Lowland-Sierra based on extensive lexical and phonological data from eight Totonacan languages. However, MacKay and Trechsel (2015: 154), while recognizing that the lexical data point to a division between Northern and Lowland-Sierra, argue for a split between Sierra versus Northern-Lowland based on patterns in the inflectional paradigms and morphological features in 11 languages of the family (MacKay and Trechsel 2015, 2018a,b). Moore's (2017) analysis based on shared innovations of lexical data from 12 Totonacan languages supports a Northern versus Sierra-Lowland distinction, even though languages like Filomeno Mata appear to be somewhere between Sierra-Lowland and Northern.

Historical-comparative research on the Totonacan languages has come a long way in the last decade with the documentation of more language varieties. Beck (to appear), for example, more recently proposes the classification in Figure 3 based on 18 language varieties. Beck proposes a Central Totonac branch divided into Northern and South Central-Lowland, which further branches out into Lowland-Sierra. This proposal is based on lexical isoglosses and statistical measures of lexical similarity and builds on work by Brown et al. (2011, 2014).

² The traditional classification in Figure 2 summarizes hypotheses on the Totonacan family proposed in Arana McQuown (1940, 1990), Osnaya (1953), García Rojas (1978), Watters (1988), MacKay (1991, 2011), and MacKay and Trechsel (2006, 2012).

TOTONACAN
 TEPEHUA
 Pisaflores
 Tlachichilco
 Huehuetla
 TOTONAC
 Misantla
 CENTRAL TOTONAC
 NORTHERN TOTONAC
 Apapantilla (a.k.a. Xicotepec Totonac)
 Zihuateutla
 Upper Necaxa (a.k.a. Patla-Chicontla)
 Coahuilán
 SOUTH CENTRAL-LOWLAND
 Cerro Xinolatépetl (a.k.a. Ozumatlán)
 Filomeno Mata
 LOWLAND-SIERRA
 LOWLAND (Papantla)
 Cerro del Carbón
 Escolín
 SIERRA
 Coyutla
 Coatepec
 Zapotitlán (a.k.a. Sierra or Highland Totonac)
 Ozelonacaxtla
 Olintla
 Huehuetla Totonac

Figure 3: Classification of the Totonacan language family (Beck, to appear)

While there are easily recognizable cognates and grammatical similarities between the languages in the family, the phylogenetic relations in Figure 3 also suggest a considerable amount of internal diversity and linguistic variation. The comparison of lexical cognate sets used in this classification maintains the distinction between the Northern branch from Lowland and Sierra. The Northern branch is also distinguished by the development of the two mid-vowels, /e, o/, in contexts not predicted by conditioning environments, while Lowland and Sierra generally only have three phonemic vowel qualities with contrastive length and phonation (see also Brown et al. 2011). Figure 3 also shows that South Central-Lowland, as suggested in Moore’s (2017) study, includes Filomeno Mata and Cerro Xinolatépetl (a.k.a. Ozumatlán). This conclusion is interesting because Cerro Xinolatépetl is geographically closer to the Northern languages, yet shared lexical isoglosses indicate a

closer link to Lowland-Sierra. Moore (2017) shows that Coahuilán Totonac is within the Northern branch based on lexical data and sound correspondences, an observation that was suggested in MacKay and Trechsel (2011), although the study showed that the classification of Coahuilán based on shared morphological features fails to place the language in one subgroup.

Zihuateutla Totonac is a member of the Northern Totonac branch of the Totonacan language family. The relationship of ZT to the other languages in the Northern branch, particularly Upper Necaxa Totonac (UNT) and Apapantilla Totonac (AT), has been uncertain. Even though the community of ZT is geographically closer to UNT, it is classified as a dialectal variant of AT in *Ethnologue* (Eberhard, Simons, and Fennig 2020). This misclassification stems from the lack of language documentation. A recent assessment, however, using the Automated Similarity Judgment Program (ASJP—Müller et al. 2013) based on a 100-word Swadesh list with data from the 18 language varieties in Figure 3, suggests that Zihuateutla is, at least lexically, more closely related to Upper Necaxa.³ Figure 4 shows that ZT and UNT have a closer genetic affiliation based on lexical similarities than AT.

³ The branching structures in Figure 4 have been leveled out for presentation purposes, although the original lengths of the branches of the ASJP tree reflect relative lexical distances. ASJP trees are constructed with a neighbor-joining algorithm on a matrix of Levenshtein distances between languages. The Levenshtein distance is a calculation based on the number of changes needed to convert one word into another semantically similar word, where each change (insertion, deletion, or substitution) is calculated and normalized in order to account for differences in word length or chance similarity; see Brown et al. 2008 for a description of the methodology.

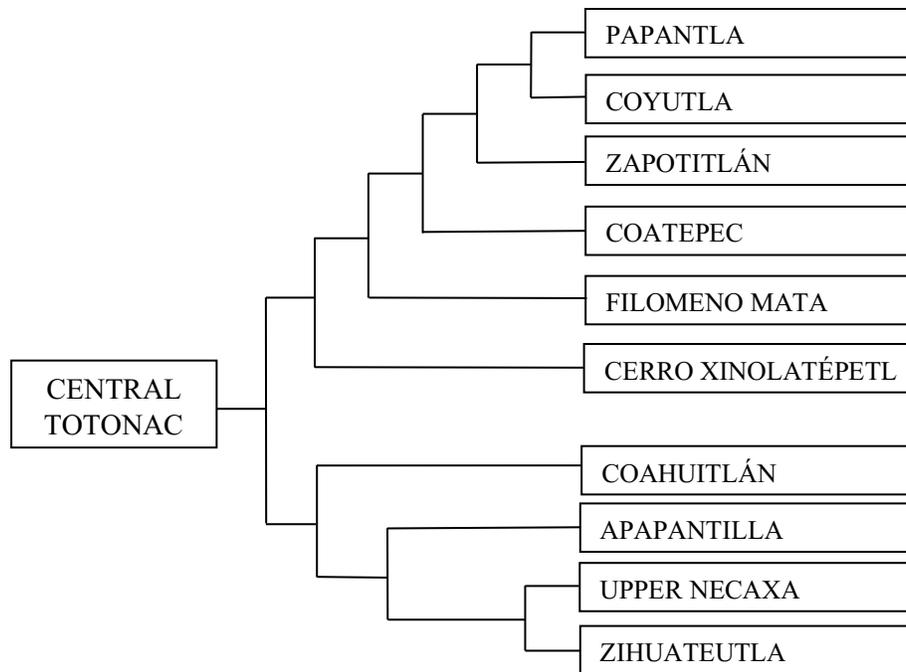


Figure 4: Classification of Central Totonac based on lexical similarity (Beck, to appear)

The classification in Figure 4 is interesting since Upper Necaxa is phonologically distinct from ZT, having innovated the presence of a glottal stop in all environments where a uvular stop is found in ZT. ZT and AT have also retained the lateral affricate /tʎ/, a distinct feature of the Totonac branch, which has neutralized to the lateral fricative /ʎ/ in UNT. In terms of morphological features, my description of ZT shows that it is similar to AT in aspectual conjugations (see §5.2.1.2) and forms of stative posture verbs (see §5.3.2) although some lexical isoglosses suggest a closer link to UNT.⁴ The data from Zihuateutla Totonac also contributes to the reconstruction of the phonology of Proto-Totonacan, since ZT has a uvular fricative in allophonic variation with a velar fricative. This observation may lend support for the reconstruction of the languages in Brown et al. (2011) and Davletshin (2008), who reconstruct both the velar *x and glottal *h fricative for Proto-Totonacan, as opposed to the reconstruction of just the glottal *h in MacKay and Trechsel (2018a,b). While the description of ZT in relation to other languages in the family requires a

⁴Some further observations supporting this proposal that were not included as part of the comparative data used to determine the classification in Figure 4 include negation, which is formed with the negative marker *lha:* in ZT, which is cognate with *ja:* in UNT; in Apapantilla, the negative particle is *tu:* 'not'. Coordinating conjunctions in ZT *e:* and UNT *he:* are cognate forms that may be borrowings from Spanish, though AT uses the conjunction *la:* 'and'. The complementizers, which are cognates in all three languages, take the form of *ti:* and *tu:* respectively in ZT and UNT, and *anti:* and *antu:* in AT.

systematic and formal comparison, it is differences such as these that represent important clues to the reconstruction of the language family. The documentation of Zihuateutla makes it possible to shed some light on the relations between the languages in the Northern branch, which contributes to the reconstruction of the linguistic prehistory of Totonacan.

1.2 The Community of Zihuateutla

The town of Zihuateutla is located within the larger municipality of Zihuateutla that is located in the northern region of the Sierra Madre Oriental of Puebla State, Mexico. The town has a population of around 1,067 according to the 2020 Mexican census (INEGI 2020). Zihuateutla Totonac is the indigenous language of the majority of people in this community, accounting for about 90% of the population. According to the 2020 census, 41 residents are reported to be monolingual Totonac speakers while most community members identified themselves as bilingual speakers of Totonac and Spanish. Most children still learn ZT as a first language along with Spanish. However, this observation is not the case in all Totonacan communities. Lam (2009, 2012) shows that some Totonacan communities have stopped transmitting the language to their children and have adopted Spanish as the primary form of communication. The reasons for this decline is largely because Spanish is the language of education and business and its use and economic opportunities associated with it are growing in the region (Lam & Beck 2008, Lam 2009, 2012). McGraw's (2019) work in Ozelonacaxtla, however, shows that bilingualism is flourishing, an observation that seems to coincide with what I observed in the Zihuateutla Totonac community.

Zihuateutla is located at the top of a mountain 996 meters (3,270 feet) above sea level and consists of about 250 homes. The name Zihuateutla is of Nahuatl origin (from *cihuatl* 'woman' and *teuctli* 'lord, knight' (Online Nahuatl Dictionary 2020)), the meaning of which is said to be *mujer que gobierna* 'the woman that governs.' The name, according to my consultants, is based on a legend that the mountain on which Zihuateutla sits is so high that it watches over and protects all the other villages in the region. This area also has fertile landscape, where the people cultivate corn, beans, tomatoes, sugarcane, vanilla, and ginger.

Members of the community raise livestock like pigs, chickens, and turkeys, all of which form a part of subsistence farming.

Zihuateutla is surrounded by other communities that speak Totonac and Nahuatl varieties (see Figure 5 generated on *maps.apple.com*).⁵ One of the closest towns is the Totonac community of Ocomantla, which resides along a main highway that leads to the primarily Nahuatl community of Ahuaxintitla. Ahuaxintitla is directly contiguous with Ocomantla, about 1.1km (0.7mi) north and 1km west of Zihuateutla. The towns of Patla and Chicontla, where Upper Necaxa Totonac is spoken, are about 16km (10mi) east of Zihuateutla, although UNT is also spoken in the towns of Cacahuatlán (around 11km or 7mi east of Zihuateutla) and San Pedro Tlaolantongo (around 31km or 19mi southeast of Zihuateutla). Apapantilla lies further away, some 49km (30mi) northeast of Zihuateutla.

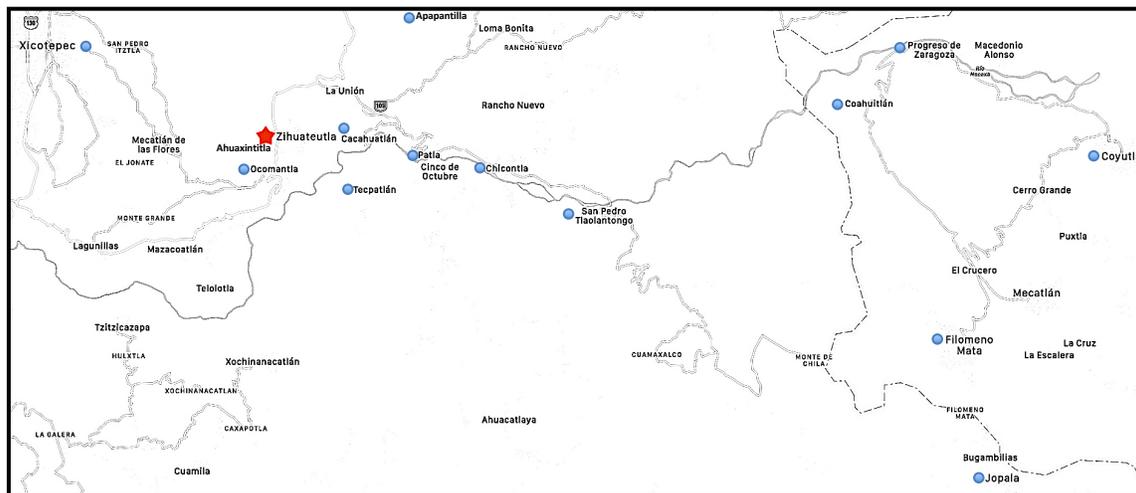


Figure 5: Zihuateutla and neighboring communities

Ocomantla resides along the main highway that comes from Xicotepec de Juarez, the nearest urban center in the area. Zihuateutla is accessible from this main road crossing Ocomantla, but is fairly elevated and secluded. Little transportation makes its way up to the village center except for taxis and commercial trucks. To travel to the ZT community from the main road in Ocomantla, people hike about 45 minutes uphill (3.2km or 2mi distance) to the town center. Since Xicotepec is the nearest urban city in the area, and

⁵ The map in Figure 5 is not drawn to scale as many Totonacan communities were added in manually. Communities with a blue dot represent Totonacan communities in this region; the community of Zihuateutla is marked with a red star. The map includes some Nahuatl communities, but these are not marked and many Nahuatl communities in the area are not included.

community members travel there often for goods and services, people need to first travel to Ocomantla, where they can take the main road to Xicotepec de Juarez, which is about 17km (10mi) away, a 30-minute bus or automobile ride from Ocomantla.

Totonacs have a rich cultural history, which in Zihuateutla is celebrated, most notably, at the festival of San Manuel once a year in May or June. The celebration lasts for nine days with music, costumes, dances, food, and religious ceremonies that blend Catholic and Mesoamerican rituals (Stresser-Péan 2009). San Manuel is considered the patron saint of this community and it is believed that he caused holy water to spring from the mountain. This water, or as they call it, *le:’qpáxni’* ([*li:-* (INST) *a’q-* ‘head’ *pax-* ‘bathe’ *-ni’* (DVB)], literally, ‘thing used to wash one’s head’), attracts Totonacs, Nahuas, and mestizos from around the region, who visit the spring in hopes of cleansing and curing their ailments. A statue of San Manuel stands in the community and is the basis of a well-known legend. According to my consultants, government officials wanted to take the statue to La Union, the government center in the region but as the legend is told the statue of San Manuel did not want to leave and so he became too heavy to carry. Where the statue of San Manuel became too heavy to carry, community members have placed *la cruz cansada* ‘the tired cross’ and this is thought of as a sanctuary where travelers can rest and provide offerings to San Manuel, who is believed to guide them on their journey. Other sacred places in the community include two caves: *pu:xtéqni’* ([*pu:-* (CNTR) *xteq-* ‘empty’ *-ni’* (DVB)] literally, the ‘empty place’), and *i’xchik misín* ([*i’x-* (3POSS) *chik* ‘house’ *misín* ‘jaguar’], literally the ‘jaguar’s house’). The caves are spiritual places for making offerings and performing rituals as it is said *para curar enfermedades* ‘to cure illnesses’ and *para quitar la maldad* ‘to rid oneself of evil’.

1.3 Fieldwork and Methodology

The data for this project were collected between 2013 and 2017 in collaboration with 12 speakers from four different families from Zihuateutla. Participants ranged in age between 17 years old (1 speaker) to over 70 years old (3 speakers), with most being in their 30s and 40s (8 speakers). I first began fieldwork in the fall of 2013. My initial connection to the

community was through Fernando Diego Hernández Villegas, who has a deep interest in preserving Totonacan language and culture. Fernando shared many stories about Totonac traditions and “sacred places” within the community. He has also produced a Zihuateutla Totonac-Spanish dictionary utilizing the community orthography (see §2). I also worked a bit with Fernando’s wife, Maria Guadalupe Ortiz Méndez, and his oldest daughter, Thomasa.

I spent most of my time working with two other families. Fabiola Andrade Santiago, who was in her early 30s, worked with me extensively from the fall of 2013 until my last trip in the summer of 2017. During that first year, I worked several hours with Fabiola’s father, Armando Andrade Villegas, who was one of few people who remembered how to count to 100 in Totonac. Armando’s mother, Regina Villegas Andrade, a mostly monolingual woman in her 70s was enthusiastic to have me record stories about her life and childhood. Throughout this time, I additionally worked with Raymundo Lechuga Pérez, also in his early 30s, and his family. Raymundo worked with me extensively during my first field visit in 2013 although in field visits that followed in 2014 through 2017, I worked more closely with Raymundo’s mother-in-law, Matilde Cruz Cravioto, and his wife, Marta Pascual Cruz. I also had the opportunity to record Raymundo’s father, Santiago Lechuga Ortega, an elder known for his story-telling abilities and knowledge of cultural narratives and myths from the past.

Elicitation sessions were conducted at participants’ homes usually in a bare room or outside at the front of the house supplied with a table and chairs. The environment provided challenges for audio recordings as there were occasions of unexpected background noise (i.e. chickens crowing, dogs barking, announcements made over loudspeakers or megaphones, etc.). Nevertheless, all sessions were audio recorded with a professional digital recorder, a Marantz PMD 661 solid-state recorder with a modified pre-amp optimized for voice recording. Speakers were equipped with a lavalier condenser microphone attached to the collar of their shirt. Sound files were saved in 48 KB 24-bit WAV format to an SDHC memory card and backed up onto my personal computer and a USB drive. Materials resulting from elicitation tasks that required the labeling of pictures were digitally scanned upon return from the field. Elicitations conducted via interviewing or that were task-based were completed with several consultants in order to reproduce and

compare results, as well as to gather linguistic information from a variety of speaker perspectives. Data recorded by elders that participated in recordings of spontaneous speech were transcribed later in collaboration with the elder's children or grandchildren (Raymundo and Fabiola, respectively). Workdays consisted of two half-day sessions (approximately 3-4 hours) in the mornings at one household and in the afternoons at another household Monday through Friday, with one half-day session on Saturdays. When not eliciting new data, most of the time was dedicated to translating and transcribing recorded textual material with the language consultant, as well as revising previous work and database terms and expressions for accurate documentation.

Altogether, the data for this project were gathered on fieldstays in Zihuateutla in August-September of 2013, June-July of 2014, and February-April in 2016. The Endangered Languages Fund financed my first field stay to document the Zihuateutla language. The Social Sciences and Humanities Research Council funded the two subsequent trips through grants for the Upper Necaxa Field Project awarded to David Beck (DOI: <https://doi.org/10.7939/R3WD3Q33P>). My last visit to the community was in June of 2017, where together with a team of linguists and botanists, we gathered traditional knowledge about plant classification and plant use in the community as part of an ethnobotanical project.⁶ In total, the data that I collected and used as part of this dissertation consist of over 800 pages of field notes, approximately 10,000 lines of annotated sentences and phrases and about 2,000 lexical entries in the dictionary database. All data are now stored in secure servers at the Language Documentation Research Cluster (LDRC) and on a Google Drive maintained by the University of Alberta. The data from 2013-2014 have been deposited with the Endangered Language Fund.

For data collection, I used a combination of three methods: elicitation, staged events, and naturally occurring speech. I began collecting data by conducting a survey constructed by Kaufman et al. (2004) containing 680 elicitation items for use in a dialectological investigation of the Totonacan languages. The questionnaire contains the Swadesh 100 list

⁶ This field visit was part of David Beck's and Jonathan Amith's project *Totonac ethnobotanical knowledge: Documenting traditional ecological knowledge across communities* funded by the Endangered Languages Documentation Programme. This archive of materials may be accessed through the Endangered Languages Archive (<http://hdl.handle.net/2196/87ccad7-3103-40f0-8212-cfe8d5241431>) and the data gathered are not used as part of this dissertation since it remains largely untranslated and untranscribed.

(Swadesh 1955) and elicits forms exploring many of the central topics in Totonac grammar. A list of 100 words (selected from the questionnaire) embedded in a carrier phrase was also recorded from six different speakers (three female and three male) for phonetic analysis. Additionally, I elicited a large amount of paradigmatic information as an extension of this survey and in order to fill gaps in the data collection.

Data were also gathered through stimulus-based elicitations using video and pictures as well as storyboards. The *Field Manuals and Stimulus Materials* created by the Language and Cognition Department at the Max Plank Institute of Psycholinguistics (<http://fieldmanuals.mpi.nl/>) provided sources for staged elicitations. The *Topological Relations Picture Series* (Bowerman & Pederson 1992), for instance, consists of 71 pictures, which are aimed at observing how linguistic structures encode spatial relations between a FIGURE and GROUND element in a scene. The *Cut and Break Clips* (Bohnenmeyer, Bowerman & Brown 2001) consists of 61 short video segments that were used to observe causative-decausative alternations on verbs used in descriptions of breaking and cutting. Stimulus-based elicitations were conducted with at least two different speakers.

Naturalistic data were recorded in the form of (spontaneous) narratives from five different speakers. These stories were fully transcribed and analyzed. Other stories were elicited with materials created by the *Totem Field Storyboards Working Group* (<http://totemfieldstoryboards.org>). *Totem Field Storyboards* provide a collection of picture book stories with context filled scenarios that elicit, for example, conditional, hypothetical, and modal constructions without asking speakers to translate. The *Frog Story* (Mayer 1969) was used to trigger descriptions of dynamic events and provide examples of narrative structures. I also gathered data using the picture book series designed for the *MesoSpace Project* at the University of Buffalo (www.acsu.buffalo.edu/~jb77/Mesospace.htm) to document the range of functions and uses of body-part terms and general partonymic terms that are pervasive in Mesoamerican languages. These elicitation techniques were an effective way of gathering data on specific linguistic constructions without asking speakers to translate, particularly with my two main consultants, who were not inclined to tell other types of stories.

The methodology employed in the grammatical analysis aims to utilize a descriptive framework employing concepts that are typologically accessible and familiar to a general

linguistic audience whenever possible. For concepts that may be particular to Totonacan linguistics, the description uses terminology that is common within the Totonacan literature and whenever the description deviates from a more general descriptive framework, terms that are used in novel or language-specific ways are defined and exemplified. The grammatical analysis takes a form-based approach and is therefore organized based on morphological and structural features of linguistic categories. Even though the formal and functional aspects of linguistic elements are connected, as suggested in Payne (2014), these features are identified independently of one another by first presenting the form(s) of a particular category and then discussing their functions. Taking a form-driven approach to the linguistic description is, for the most part, a straightforward choice for Totonac since particular forms are relatively easy to identify and show the potential for being described systematically, at least from a historical perspective, while their functions are more varied.

Phonology and phonological patterns are described separately in a single chapter, however, later chapters address particular morphological operations affecting certain morphophonemic environments. The section on subordinators is organized according to the function the clause-combining elements play as opposed to the form since these are introduced with a set of particles that are highly heterosemous — that is, the particles are semantically and etymologically related but synchronically belong to different morphosyntactic categories (Lichtenberk 1991). While much of the form-based description is centered on data elicited from interviews with the purpose of obtaining full paradigms and filling gaps in the data collection, whenever possible the examples presented were those from more contextualized scenarios and narrative structures in order to illustrate the analysis with more naturalistic data. Throughout this thesis, examples taken from stimulus-based elicitations and narratives are easily recognized as they contain the speaker's initials, a title ID code, and the line number in the textual database. Appendix A shows a complete list of the documentation materials in the audio archive along with some metadata. That appendix includes speakers' initials, title, length of recording, type of communicative event, and whether the data has been transcribed and analyzed. Appendix E presents four of these narratives in full that are often displayed in the examples in this dissertation.

1.4 Totonacan Linguistic Literature

This section reviews prior research on central topics in Totonacan linguistics, beginning with some of the major descriptive works, such as grammatical sketches and data collections. Following this, I present some research and literature in Totonacan linguistics in terms of phonetic studies, and some of the topics covered in this dissertation. A more comprehensive bibliography of the literature up to 2012 can be found in MacKay and Trechsel (2012). This section begins by first presenting grammatical and descriptive works in Totonacan followed by recent research undertaken by Totonacan and Mexican students within Mexico. Following this, the section is organized by topic and include studies in Totonacan linguistics dealing with phonetics, phonology, morphology, and syntax.

Most Totonacan language varieties are under-documented or under-described. Of the 18 languages listed in the classification of the family in Brown et al. (2011 & 2014) and Beck (to appear), only seven have published grammars or dictionaries. Of these seven, two grammars are from languages of the Tepehua branch—Tlachichilco Tepehua (Watters 1988) and Huehuetla Tepehua (Kung 2007a). The other five grammars describe languages from different Totonac branches—Misantla (MacKay 1991, 1999), Coatepec (McQuown 1990), Huehuetla Totonac (Troiani 2004), Filomeno Mata (McFarland 2009), and Upper Necaxa (Beck 2004). A grammatical sketch of Upper Necaxa Totonac can also be found in Beck (2011a), which serves as the introduction to an extensive dictionary. Linguists working under the auspices of the *Summer Institute of Linguistics* (SIL) have produced several bilingual dictionaries and short grammars as well (Papantla: Aschmann 1973, Sierra: Aschmann 1962, 1983, 2000; Reid et al. 1968, Reid and Bishop 1974, Reid 1991). Bible translations and pamphlets for scholastic and religious instruction, and several stories are available on-line through the SIL website (<https://www.sil.org/resources/language-culture-archives>). Some collections of stories and grammatical information have been compiled by linguists for Papantla Totonac (Levy 1990), Misantla Totonac (MacKay & Trechsel 2005, 2010) and Pisaflores Tepehua (Watters 2010a). Several collections of narratives have also been published for Apapantilla Totonac (a.k.a. Xicotepec Totonac) (Reid et al. 1968), Papantla Totonac (García Vidal & García García 1972, García Ramos 1985), and Huehuetla Totonac (Troiani 1989). More recently a collection of interlinearized

traditional narratives from 13 varieties of Totonac and Tepehua was edited by Levy and Beck (2012).

A number of theses have been written by several Totonac students, some from the *Centro de Investigaciones y Estudios Superiores en Antropología Social* (CIESAS) in Mexico. In a Master's thesis, Tino Antonio (2006) analyzes the use of stative posture verbs in locative constructions in the speech of children in his home community of Olintla; he also recently published an article on Olintla phonology (Tino Antonio 2020). García Ramos (2007) published a bilingual Totonac-Spanish dictionary for Xalapa Totonac. For Ozelonacaxtla Totonac, Román Lobato's (2008) MA thesis describes some of the phonological properties that appear at certain phrasal junctures, a widespread property of languages in the Sierra region. Santiago Francisco's MA thesis (2012) and PhD thesis (2018) investigated language contact and acquisition between Spanish and Totonac bilingual speakers in his community of Filomeno Mata. Santiago Francisco (2009) also investigated terms for colors and smells as part of his BA. Santiago Francisco and Figueroa Saavedra (2016) published an article on the use of numeral classifiers by younger generations in Filomeno Mata Totonac. For the Totonac of Santa Ana Chumatlán in Veracruz, Montes Castañeda (2014) looks at the acquisition of verbs of dressing and undressing in his MA thesis. Juárez Esteban (2016) wrote her MA thesis on the morphology of the verb complex in Tuxtla Totonac. In Zihuateutla, Fernando Diego Hernández Villegas also composed a dictionary that is as yet unpublished.

Linguistic research on Totonacan has primarily focused on particular phonological features in specific language varieties. Watters (1980, 1987) uses a descriptive approach within the framework of distinctive features and feature geometry to describe the phonology of Tlachichilco Tepehua. Phonological descriptions using feature geometry are also found in MacKay and Trechsel (2013) for Pisaflores Tepehua, and in MacKay (1994) for Misantla Totonac. A constraint-based account of the phonotactic patterns of syllables within Optimality Theory is found in Kirchner and Varelas (2002) for Upper Necaxa Totonac. A description of the phonological (and phonetic) properties that may have been involved in the diachronic path that would lead to the emergence of ejective fricatives is found in Beck (2006b). A reconstruction of uvular phonemes, which have merged with the glottal stop, in Huehuetla Tepehua is provided in Smythe (2003). Descriptions of the

phonological properties of Totonacan that have included a more detailed analysis of phrase-boundary or sentence-level prosodic effects have been described for Ozelonacaxtla Totonac (Román Lobato 2008), Filomeno Mata Totonac (McFarland 2009), Tlachichilco Tepehua (Watters 2010b), and Coatepec Totonac (Levy 2016). Other descriptions of Totonacan phonology vary in the extent that they cover allophonic variation, phonological processes, and morphophonemic rules in Papantla Totonac (García Ramos 1979, Levy 1987), Huehuetla Tepehua (Kryder 1987, Kung 2007a), and Misantla Totonac (Kaplan 2006).

Phonological descriptions in the literature, however, have been mostly based on the field researchers' auditory perceptions of the sound system and few phonetic studies have been conducted for Totonacan. Phonetic research has centered on the acoustic properties of vowel laryngealization in Misantla (Trechsel & Faber 1992, unpublished) and Papantla (Alarcón 2008). An acoustic analysis of post-velar stops and vowels are presented for Huehuetla Tepehua in a Master's thesis by Smythe (2000) and for Papantla Totonac in Herrera Zendejas (2009). Measurements of vowel quality, phonation, and stress with respect to syllable position are published for Upper Necaxa Totonac in Garcia-Vega and Tucker (2019). Even fewer studies have focused on the set of ejective obstruents in Totonacan. The acoustic properties of duration, center of gravity, and voice onset time have been measured in the set of ejective fricatives in Upper Necaxa (Puderbaugh and Tucker 2013, Puderbaugh 2015). An analysis of the acoustic properties of pulmonic and glottalic obstruents for Huehuetla Tepehua is found in Puderbaugh (2016). Puderbaugh (2019) examines some of the acoustic properties of glottalized fricatives and vowels in Upper Necaxa Totonac.

The morphosyntax of Totonacan languages has been described as posing challenges to typological generalizations. One of the first studies to look at the complexity of the Totonacan verb is for Zapotitlán by Aschmann and Wonderly (1952), who describe the large number of inflectional categories and observe that the order of affixes is variable. Variable order of affixes in Totonacan verbs has also been examined within a morphological template for Papantla Totonac (Levy 1994), Upper Necaxa Totonac (Beck 2008b), and Filomeno Mata Totonac (McFarland 2009). These accounts have described the order of verbal affixes as governed by formal rules of the language, morphophonemics,

relations of semantic scope, or as variable where semantic differences in the position of the affix remain unclear and under investigated.

Studies in Totonacan morphology have also focused on the functions and uses of particular morphemes and the argument structure of the verb, where descriptions vary greatly from language to language. Watters (2017a) analyzes several valency-increasing and valency-decreasing constructions, as well as those morphemes that have no effect on valency, such as body-part incorporation for Tepehua. Watters (1988, 2017a) further proposes two additional voice constructs in Tlachichilco Tepehua, the passive and antipassive, the latter of which is also proposed for by McFarland (2010), who further suggests a middle voice construction in Filomeno Mata Totonac. Other Totonacan descriptions, however, have described these voice-like morphemes as indefinite subject or indefinite object markers (McQuown 1990, Levy 1999b, MacKay 1999, Kung 2007) or as a general detransitivizer by Beck (2004) and then later as a voice construction in Beck (2014). Watters (1996a, 2007) examines scopal relations and the semantics of applicatives and verbal arguments within the framework of Role and Reference Grammar and Frame Semantics for Tlachichilco Tepehua. Levy (2002b) in Papantla Totonac maps the argument structure for dative constructions, which is commonly described as a benefactive in Totonacan linguistics even though it introduces a wide range of semantic roles to verbal predicates. The argument structure of transitive verbs from a constructionist's perspective for Tepehua is described in Watters (2013).

The role of grammatical relations and control of verbal agreement in Totonacan challenges linguistic theory, where grammatical relations are characterized as indistinguishable from one another in multi-object constructions (Levy 2002b, MacKay & Trechsel 2008, Beck 2016). This problem of mapping semantic roles to syntactic arguments in multi-object expressions has led researchers to describe Totonacan as 'symmetrical object languages' as in Bresnan and Moshi (1990) in Papantla Totonac (Levy 2002b), Upper Necaxa Totonac (Beck 2003, 2006a, 2007a,b, 2013, 2016) and Misantla Totonac (MacKay & Trechsel 2008). A number of non-compositional verb forms in the person and number paradigm have been described as forming "morphological phrasemes," or inflectional idioms, in Beck and Mel'čuk (2011). A comparative description of

morphosyntactic patterns of inflectional idioms in the Totonacan languages is found in MacKay and Trechsel (2015).

Totonacan languages are also known for having a large set of terms expressing body parts that are highly polysemous and heterosemous and can be incorporated into verbal, nominal, adjectival, and adverbial stems displaying a wide range of uses which mostly remain unexplored. Body-part morphemes have been described as having valency-altering effects on the verb stem in Papantla Totonac (Levy 1994, 1996) and Tlachichilco Tepehua (Watters 1996a). The use of body-part terms in expressions depicting spatial location, which is usually ascribed to the formal class of adpositions in other languages, is pervasive across the family, but have only been systematically described for Papantla (Levy 1992a, 1999a & 1999b). Body-part terms are also found grammaticalized as classifiers in the numeral system across the languages (Huehuetla Tepehua: Bethel 1948, Kung 2007b; Papantla: Levy 2003, Upper Necaxa Totonac: Garcia-Vega 2017, 2018). Child language acquisition studies on the use of these terms in locative expressions with stative verbs have been conducted for Olintla (Tino Antonio 2005) and Upper Necaxa (Varela & Klint 2006).

Several studies describe other word-level processes, some of which are unique to Totonacan languages and others which have been a point of contention within the literature. In Papantla Totonac, Levy (2002a) describes the morphosyntactic and semantic properties of a language-specific prefix termed *ajeno*, or alienative – a derivational affix that expresses the idea that the event designated by the verb happens in “somebody else’s domain” (Levy 2002a). Totonacan languages were previously described as lacking a class of adjectives (Misantla: MacKay 1999) or as having a closed class of adjectives (Papantla: Levy 1992b, 2004). These accounts, however, have not been observed in some of the other languages (Coatepec: McQuown 1940, 1990; Upper Necaxa: Beck 2000), and Levy (2004) notes that adjectives in Misantla are a formally distinct lexical category. Compounding is described as used for derivational and inflectional processes for Tlachichilco Tepehua in Watters (2017b), and for derivational and “quasi-inflectional” processes in Upper Necaxa Totonac in Beck (2011b). The interpretation of deverbal nouns in Tepehua is discussed in Watters (1996b), who considers this widespread word formation process from a diachronic and synchronic, or mostly lexicalized, perspective. A comparative study on the functions

and uses of the reciprocal morpheme in various Totonacan languages is found in MacKay and Trechsel (2003).

Studies on the functions of adverbs and the unique phonological and morphological properties of ideophones have also appeared in the literature (Apopantilla: Bishop 1984, Huehuetla Tepehua: Kung 2005, Upper Necaxa: Beck 2007c, 2008a; Filomeno Mata: McFarland 2010, Pisaflores: Davletshin 2014). O'Meara et al. (2019) provide the first and only study of ideophones with olfactory senses in Huehuetla Tepehua. These studies of ideophonic adverbs, which have been described as having sound-symbolic patterns that have been conventionalized across the languages, have revealed important distinctions and cross-linguistic variation in sound symbolism (Kung 2005, Beck 2008a, O'Meara et al. 2019).

Totonacan languages are also described as having variable constituent order, although few studies have explored the discourse factors or patterns that guide the order of elements. One of the first works on sentence-level syntax was for Apopantilla Totonac in Reid et al. (1968) and Reid (1979), the latter of which framed the discussion on constituency and discourse structure within a Tagmemic framework. The statistical frequency of possible word order combinations in intransitive and transitive clauses and a description of various types of complex clauses are included in the descriptive grammar of Huehuetla Tepehua in Kung (2007a). Levy (2002c) investigates the morphosyntactic and semantic discourse functions of the prefix *xa-* in Papantla Totonac. Beck (2017a) presents comparative data on relative clauses in a number of Totonacan languages and concludes that relativizers are better categorized synchronically as complementizers as opposed to relative pronouns. Different types of relative clauses in Totonacan have also been explored in Zapotitlán (Aschmann 1984), Upper Necaxa (Beck 2014), and Coahuatlán (Moore 2016).

In sum, the linguistic literature on Totonacan languages covers narrow aspects of the language in terms of descriptions on the phonology, morphology, syntax, and semantics. The methodology employed in most of these studies further stem from extensive elicitations focused on particular linguistic phenomena as opposed to more naturalistic data. The following description of Zihuateutla Totonac nevertheless is informed by these studies and draws on the terminology used in these descriptions that may best fit the data

in ZT with the intention of framing the analysis within a typological and comparative standpoint within Totonacan studies.

1.5 Structure of the Dissertation

This dissertation describes aspects of the grammar of Zihuateutla Totonac (ZT) with a focus on the morphology of the language, particularly on nouns and verbs and is organized as follows.

Chapter 2 describes the sound system of ZT which will aid the reader in understanding the practical orthography used in the examples in this dissertation. The phonological description includes the distribution of each phoneme and the processes that result in allophonic variation. The practical orthography as well as the community orthography is discussed. Lexical stress patterns, and phrase- or sentence-level prosodic phenomena are also covered.

Chapter 3 briefly introduces the reader to nouns and verbs both of which are covered more extensively in Chapters 4 through 6. This chapter further presents the forms and functions of other lexical and grammatical classes. Topics included in this chapter are the structure of simple clauses, word order of major constituents, and copular and subordinating clauses, which will help the reader in interpreting examples in subsequent sections. The morphology and distribution of adjectives, an open class of nominal modifiers, and adverbs, predicate modifiers, are illustrated. The section on adverbs includes a formal distinction between two lexical subclasses of adverbs, namely ideophonic and deictic, which are distinguished on semantic and morphological grounds. This chapter also introduces a sub-class of nouns known as body-part terms, which are pervasive in Totonacan grammar. Semantically, body-part terms express parts of a whole with meanings related to anatomy, but are also used figuratively to refer to parts of other objects and to form locative expressions in stative and active scenes; this lexical subclass is highly polysemous and has many functions. The chapter ends with a description of closed grammatical classes that include pronouns, demonstratives, numerals, the negative particle, interrogatives, and subordinators. The section on various subordinating particles and

adverbials in ZT is divided into those subordinators that introduce relative clauses, complement clauses, and adverbial clauses.

Chapter 4 describes ZT nominal morphology and the structure of the noun phrase. Nouns in ZT can be derived from verbs, adjectives, and other nominal stems with a number of derivational affixes and through compounding. On the whole, nouns do not take much inflectional morphology and are optionally marked for plural number. This chapter describes the morphology of optional number-marking on nouns and the possessive construction. The lexicon of nouns includes alienably possessed nouns and a class of inalienably possessed nouns comprised of body-part and kinship terms, which always appear inflected for person of possessor. The subclass of body-part terms as relational nouns in locative expressions is discussed in §3.3.3, and as incorporated into other lexical classes in the section on adjectives (see §3.3.1.5) and verbs (see §6.1.5).

Chapter 5 describes inflectional morphology affecting verbs. Verb inflection in ZT is complex, marking agreement for aspect, tense, mood, person, and voice. The chapter first presents aspectual inflections for dynamic verbs, which may show agreement for four aspects — perfective, imperfective, progressive and perfect. Verbs in ZT also show inflectional morphology for three tenses — past, present, and future; four moods — the indicative, optative, potential, and irrealis; and two voices — the indefinite and anti-passive. Topics in this chapter include participant marking — person and number of the subject and up to two objects on the verb. This chapter makes a formal distinction between dynamic and stative verbs based on their inflectional patterning. Dynamic verbs, for instance, take verb inflection for all aspects, while stative verbs are imperfective in their semantics and do not inflect for aspect. A sub-class of stative verbs, known as stative posture verbs, is formally distinguished based on semantic and morphological criteria.

Chapter 6 describes verbal derivational morphology, including those morphemes that have valency-increasing and decreasing effects. Derivational morphemes that increase the valency of the verb include two causatives, and four applicatives — the dative, instrumental, comitative, and allative. One derivational prefix, the inchoative/decausative, has different functions with intransitive verbs, where it functions as an inchoative, as opposed to transitive verbs, where it shows valency-decreasing effects. Many derivational affixes, described as adverbial derivational morphology, however, do not generally affect

the valency of the verb but rather modify the stem by specifying the PLACE, TIME, or MANNER in which the event takes place. These affixes are widespread and highly productive in ZT and have a wide variety of meanings related to aspect, mode, space, and time but they do not constitute obligatory categories. The chapter ends with compound verbs involving the combination of two stems to form a new stem, encoding a single event resembling serial verb constructions.

Chapter 7 concludes with a summary of the research findings and embeds the analysis within a larger typological frame. The dissertation ends with an appendix that showcases the contents of the textual database from which the examples were taken (Appendix A), a list of (near)-minimal pairs (Appendix B), and a list of verbal derivational affixes (Appendix C). Four fully interlinearized and analyzed ZT narrative texts can be found in Appendix E.

2 Phonology

This chapter addresses aspects of the sound system of Zihuateutla Totonac that are important to the phonological description of the language. ZT has a five-vowel system, which makes a typologically rare distinction in length and phonation in all vowel qualities that is characteristic for the Northern branch of the family. The ZT consonant system is typical of the Totonac branch with about 16 consonants, including a number of less usual obstruents, such as a contrastive uvular stop, a lateral fricative, and a lateral affricate — obstruents that are generally more common in languages with inventories that are larger than average (> 19) (Maddieson 2010: 541, Gordon 2016: 45). In terms of prosodic patterns, ZT shows a regular primary stress pattern and certain phonological processes that target phrase-final and clause-final positions, such as vowel devoicing and vowel or nasal epenthesis that mark prosodic boundaries at specific phonological junctures. Other clause-level properties include the shifting of certain prefixes onto a preceding word or particle in a phrase. While prosody is an area highly unexplored in Totonacan, these phonological processes that mark phrasal and sentence-level boundaries is a common property of languages in the Mesoamerican region (Campbell 2013).

This chapter presents an overview of the phonology including the phonemic inventory and practical orthography, and a description of the distribution of each phoneme and the processes that result in allophonic variation (see §2.1). The stress patterns for the various lexical classes are described (see §2.2), as well as phrase- or sentence-level prosodic properties (see §2.3). Morphologically conditioned phonological processes are discussed in the sections relevant to particular morphemes and include the adjectival plural (see §3.3.1.1), deverbals (see §4.3.1), antipassive (see §5.4.2), and causative (see §6.1.1).

2.1 Phonemic Description

This section illustrates the phonemic inventory and some allophonic processes in ZT. My analysis indicates that ZT has 16 phonemic consonants and a system of 5 vowel qualities which each show contrastive length and laryngealization. The proposed inventory and

phonetic transcriptions are based on my experience with the language as well as listening to recordings and observing spectrograms of words, phrases, and paradigms in citation forms. Input from my consultants and their knowledge and metalinguistic awareness of the language also played an important role. Consonant and vowels especially in citation forms are fairly easy to recognize but there is variability between and within speakers in the realization of laryngealized vowels. Laryngeal vowels were determined by the data, native speaker's intuitions, and etymological comparisons with forms that are proposed cognates in other Totonacan languages. Even though there are not many minimal pairs, a list of minimal or near-minimal pairs may be found in Appendix B. The current section first presents the consonant and vowel inventory and then illustrates their distribution and processes that result in allophonic variants. The section further presents the orthography used in this dissertation, which is a phonemic orthography and therefore does not represent allophonic variation.

Zihuateutla Totonac consonants include voiceless stops, voiceless affricates, and voiceless fricatives that do not have contrastive voiced counterparts. ZT also has voiced approximants and nasal phonemes. ZT has no ejective consonants which are common in the Tepehua branch of the family and in the Mesoamerican linguistic region (Campbell et al. 1986). Table 1 shows the place and manner of articulation proposed for the consonant phonemes. The phonemes are written in the International Phonetic Alphabet (IPA) and the corresponding orthographic symbol used in this grammatical description is in angle brackets < >. The rhotic tap (ɾ) in square brackets is only found in Spanish borrowings.

Table 1: ZT Consonant Inventory

	Labial	Alveolar		Palatal	Labio- velar	Velar	Uvular
		Central	Lateral				
Stop	p <p>	t <t>				k <k>	q <q>
Fricative		s <s>	ɬ <lh>	ʃ <x>		x <j>	
Affricate		ts <tz>	tɬ <tl>	tʃ <ch>			
Nasal	m <m>	n <n>					
Approximant			l <l>	j <y>	w <w>		
Tap or flap		(r) <r>					

Table 1 shows stops at four places of articulation: the bilabial /p/, the alveolar /t/, the velar /k/, and the uvular /q/. The ZT consonant system lacks the phonemic glottal stop and has retained a phonemic uvular stop which distinguishes it from its sister language, Upper Necaxa, and the languages in the Tepehua branch, where the uvular stop has merged with the glottal (Kung 2007a: 67, Beck 2011a, MacKay & Trechsel 2013: 195). The uvular stop /q/ is articulated as a uvular fricative [χ] in certain contexts described in §2.1.1.1. Voiceless fricatives at four places of articulation includes the alveolar /s/, the lateral-alveolar /ɬ/, the palatal-alveolar /ʃ/, and the velar /x/, which is also articulated as a uvular [χ] in certain environments, as described in §2.1.1.2. Plain voiceless affricates are found at three places of articulation — the central alveolar /ts/, the palatal-alveolar /tʃ/, and the lateral alveolar /tɬ/. While ZT has maintained the voiceless lateral affricate /tɬ/, which is generally characteristic of the Totonac branch, the phoneme has been lost in some of the sister languages where it has merged with /t/ or /ɬ/ (Upper Necaxa: Beck (2014), Misantla: MacKay (1999), Coahuilán: Moore (2016)). The ZT consonant system also includes two phonemic nasals, the bilabial /m/ and the alveolar /n/, the latter of which has several allophones as a result of place assimilation (see §2.1.1.4). Approximants are found at three

places of articulation, the lateral alveolar /l/, the palatal /j/, and the labio-velar /w/ (see §2.1.1.5). The rhotic tap (ɾ) is placed in parenthesis because it is only found in Spanish loan words (see §2.1.1.6).

Zihuateutla Totonac has vowels distinguishing five cardinal positions /i, e, a, o, u/ each showing contrastive length and laryngealization. The various combinations of length and phonation type are shown in Table 2, where the vowel phonemes are written in the IPA and the corresponding orthographic symbols in angled brackets < >.

Table 2: ZT Vowel Inventory

	Front		Central		Back	
	laryngeal	plain	laryngeal	plain	laryngeal	plain
High	ị ị: <i', i:'>	i i: <i, i:>			ụ ụ: <u', u:'>	u u: <u, u:>
Mid	ẹ ẹ: <e', e:'>	e e: <e, e:>			ọ ọ: <o', o:'>	o o: <o, o:>
Low			ạ ạ: <a', a:'>	a a: <a, a:>		

This inventory is typical for the Northern Totonac languages, which have innovated a five-vowel system from a proto-system of three vowels (McQuown 1942, Arana Osnaya 1953, Levy 1987, Davletshin 2008, Brown et al. 2011 & 2014, MacKay and Trechsel 2018a,b & 2015). The two mid-vowels /e, o/ are found in contrastive distributions in ZT, where some examples show minimal pairs indicating instances where the environments in which these two phonemes appear are no longer predictable (see §2.1.2). The presence of contrastive mid-vowels is distinctive of the Northern branch of the family. The mid-vowels in other (non-Northern) Totonacan languages are found in environments surrounded by uvular obstruents that condition vowel lowering (Watters 1988, Kung 2007a, MacKay and Trechsel 2010). Additionally, while vowel laryngealization in Totonacan is not well understood due to variability in production, phonological processes of spreading, and idiolectal variation, there are, however, enough examples that indicate ZT vowels have contrastive length and phonation, which leads me to consider them distinct phonemes.

In this chapter on phonology, both the International Phonetic Alphabet and the practical orthography, which is represented in angled brackets < > in Table 1 and Table 2 above, is used. ZT examples in subsequent chapters, however, are only written in the practical orthography. The orthography employed in this grammar is phonemic and mainly based on the conventions of other Totonacan and Mesoamerican orthographies, which are in turn mostly based on the Spanish writing system. The orthography used in this dissertation is very similar to orthographies promoted by the Secretaría de Educación Pública (SEP) and the Instituto Nacional Indigenista (INI) for Totonac languages. The use of <x> for /ʃ/, <ch> for /tʃ/, <tz> for /ts/, <lh> for /l/, and <tl> for /tʎ/ date back to the 16th century grammars of Mexican indigenous languages (Smith-Stark 2005) and is maintained in modern systems for writing Totonacan (Aschmann 1973, Reid and Bishop 1974, Kung 2007a, Beck 2011a). The choice of <j> for the voiceless velar /x/ is the standard choice for Mesoamerican indigenous languages, based on Spanish orthography, as is the use of <y> for the palatal approximant /j/, which is standard in the Americanist Phonetic Alphabet (APA). These orthographic symbols have also been used in Totonacan materials produced by the Summer Institute of Linguistics since the 1960's.

The practical orthography employed in this grammatical description symbolizes vowel length with the colon (:), vowel laryngealization with a straight apostrophe ('), and primary word-level stress with an acute accent. This orthography does not recognize allophonic variation; for example, the orthography does not distinguish between the velar and uvular fricatives, using orthographic <j> for both. The orthographic conventions used in the thesis also follows the Instituto Nacional de Lenguas Indígenas (INALI)'s proposed orthography for Totonac with the exception of <q> for [q] instead of <kg>.

The Zihuateutla community also utilizes the practical orthography as promoted by SEP, which is briefly introduced to children in primary school. The reason for proposing a practical orthography which differs from the community orthography is because the community orthography does not mark vowel length or laryngealization and includes the use of <kg> for /q/, and <hu>, <gu>, or <w> for /w/. Vowel length is rarely marked in the community orthography but when it is, it is indicated by double vowels.

2.1.1 Consonants

This section describes the various consonants in ZT — the stops in §2.1.1.1, fricatives in §2.1.1.2, affricates in §2.1.1.3, nasals in §2.1.1.4, approximants in §2.1.1.5, and tap/flap in §2.1.1.6. Phonological processes that result in allophonic variation are described in the section following the description of the phoneme. The Zihuateutla Totonac data in these sections are presented in the practical orthography along with a broad phonetic transcription enclosed in square brackets using the International Phonetic Alphabet. To highlight allophonic variation, a phonemic transcription is added within slashes // when relevant to show underlying representations. Appendix B further presents some minimal or near-minimal pairs found in the ZT database.

2.1.1.1 Stops

Zihuateutla Totonac has plain voiceless stops in four places of articulation — bilabial /p/, alveolar /t/, velar /k/, and uvular /q/. The stop consonants all appear in syllable-initial, medial, and final positions as in (1)-(4).

(1)	/p/	<i>pó'qo'</i> <i>cha'pán</i> <i>nap</i>	['pɔqɔ] [tʃã'pan] [nap]	‘stomach’ ‘mill’ ‘aunt’
(2)	/t/	<i>ta:'nát</i> <i>xwá:'ti'</i> <i>pu:skát</i>	[tã:'nat] ['fwã:tɨ] [pu:s'kat]	‘grandchild’ ‘metate’ ‘woman’
(3)	/k/	<i>kalayún</i> <i>chu'kú</i> <i>stampuk</i>	[kala'jun] [tʃy'ku] [stam'puk]	‘rooster’ ‘s/he cuts it’ ‘tiger’
(4)	/q/	<i>qó:'qo:</i> <i>cha'qá:n</i> <i>xoq</i>	['qɔ:qo:] [tʃã'qan] [ʃoq]	‘mute’ ‘interior’ ‘shell’

Stop consonants appear in consonant clusters as the second element of a syllable-initial onset following one of the fricatives /s/, /ʃ/, or /h/ in (5)-(8).

(5)	/sp/	<i>spu:n</i>	[spu:n]	‘bird’
	/ʔp/	<i>lhpi:pé:'q</i>	[ʔpi:pé:q]	‘nervous’
	/ʃp/	<i>xpu:lh</i>	[ʃpu:l]	‘happiness, joy’
(6)	/st/	<i>staján</i>	[sta'χan]	‘tail’
	/ʔt/	<i>lhtatá</i>	[ʔta'ta]	‘s/he sleeps’
	/ʃt/	<i>xta:n</i>	[ʃta:n]	‘possum’
(7)	/sk/	<i>ská:ta'</i>	['ska:tə]	‘lice’
	/ʔk/	<i>lhku</i>	[ʔku]	‘it burns’
	/ʃk/	<i>xka</i>	[ʃka]	‘it bites’
(8)	/sq/	<i>sqá'ta'</i>	['sqə:tə]	‘child’
	/ʔq/	<i>lhqapáqa</i>	[ʔqa'paqa]	‘light’
	/ʃq/	<i>xqo:</i>	[ʃqo:]	‘sting’

The stop consonants /k/ and /q/ appear in consonant clusters in syllable codas preceding one of the fricatives /s/, /ʃ/, or /ʔ/ in (9)-(10) or following a nasal in (11); /p/ and /t/ are not found in this coda position.

(9)	/ks/	<i>puks</i>	[puks]	‘dark’
	/kʔ/	<i>ki'klh</i>	[ki:kʔ]	‘dislike’
(10)	/qs/	<i>tzu'tzó'qs</i>	[tzu'tzɔqs]	‘red’
	/qʔ/	<i>poqlh</i>	[pɔqʔ]	‘darkness’
	/qʃ/	<i>ponqx</i>	[pɔnqʃ]	‘splash’
(11)	/nk/	<i>tlhamank</i>	[tʎa'maŋk]	‘comal’
	/nq/	<i>stalánq</i>	[sta'lanq]	‘white’

One phonological process affecting stop consonants is the lenition of the uvular phoneme /q/ to [χ] in rapid speech between vowels, or before or after a nasal plus vowel. This spirantization of the uvular stop in this environment is shown in (12), which proposes the weakening of the stop is optional indicated by the tilde (~).

(12)	<i>xo'qó:n</i>	/ʃɔ'qo:n/	[ʃɔ'qo:n]	~	[ʃɔ'χo:n]	‘s/he pays you it’
	<i>wenqén</i>	/wen'qen/	[wen'qen]	~	[wen'χen]	‘toad’
	<i>pu'tzé'nqe'</i>	/pu'tsɛnqe/	[pu'tsɛnqe]	~	[pu'tsɛnχɛ]	‘black’
	<i>sé:'qna'</i>	/'sɛ:qna/	['sɛ:qna]	~	['sɛ:χna]	‘banana’

The spirantization of the uvular /q/ > [χ] is optional and most likely dependent on rate of speech, where citation forms (or clear and slow pronunciations) reveal that the lenited

phone is underlyingly a stop consonant. This alternation is found in other Totonacan languages, for example Levy (1990: 25) describes the same environments for the optional alternation in Papantla Totonac. MacKay (1994: 375) also describes the spirantization of the uvular /q/ as optionally realized following vowels in Misantla Totonac, and Román Lobato (2008: 32) observes this process as occurring word-internally and in coda positions in Ozelonacaxtla. In ZT, the uvular fricative is found in other environments but as an allophonic variant of the velar fricative described in (26)-(27) below.

2.1.1.2 Fricatives

Fricative phonemes are found at four places of articulation — alveolar /s/, lateral /ʎ/, palatal-alveolar /ʃ/, and velar /x/. All the fricatives appear in syllable-initial, medial, and final positions in (13)-(16).

(13)	/s/	<i>sa'sán</i> <i>pasá:</i> <i>a:'tú:s</i>	[sq̣'san] [pa'sa:] [a:'tu:s]	'skunk' 'burn' 'later'
(14)	/ʎ/	<i>lhi'wi'ki'</i> <i>pálha'</i> <i>a:xí:lh</i>	[l̥iwi'ki] [paʎa] [a:'ji:l̥]	'strong' 'hard, strong' 'nopal'
(15)	/ʃ/	<i>xá:lu'</i> <i>paxá</i> <i>chiwíx</i>	['ʃa:lu] [pa'ʃa] [tʃi'wiʃ]	'pitcher' 's/he bathes' 'stone'
(16)	/x/	<i>jaxá:</i> <i>li:jíkwa'</i> <i>payúj</i>	[xa'ʃa:] [li:'xikwə] [pa'jux]	's/he pants' 'much, a lot' 'handkerchief'

Three of the fricatives, /s/, /ʃ/, and /ʎ/, appear in consonant clusters in onsets, appearing before stops (see §2.1.1.1) shown in (17)-(19), nasals as in (20), and approximants in (21). The velar fricative /x/ does not appear in clusters.

(17)	/sp/	<i>spujúju</i>	[spu'xuxu]	'pointy'
	/st/	<i>stá'ku'</i>	['stək̥y]	'star'
	/sk/	<i>ská:ta'</i>	['ska:tə]	'lice'
	/sq/	<i>sqa:</i>	[sqo:]	'shine'

(18)	/ʔp/	<i>lhpi'né'nqe'</i>	[ʔpi'nɛnqɛ]	'red'
	/ʔt/	<i>lhtúku'</i>	[ʔtuku]	'thorn'
	/ʔk/	<i>lhkitít</i>	[ʔki'tit]	'lazy person, slacker'
	/ʔq/	<i>lhqónqa</i>	[ʔqonqa]	'smell of urine'
(19)	/ʃp/	<i>xpi'pi'lé:'q</i>	[ʃpi'pi'lɛ:q]	'butterfly'
	/ʃt/	<i>xti'kát</i>	[ʃti'kat]	'backpack'
	/ʃk/	<i>xkú'ta</i>	[ʃkuta]	'sour'
	/ʃq/	<i>xqo:</i>	[ʃqo:]	'sting'
(20)	/sm/	<i>smantáj</i>	[sman'taɣ]	'purple, violet'
	/sn/	<i>snapápa</i>	[sna'papa]	'white'
	/ʌm/	<i>lhmu:tuwá'</i>	[ʌmu:tu'wɑ]	'arch'
(21)	/sl/	<i>slulúk</i>	[slu'luk]	'type of lizard'
	/sw/	<i>swa'qá</i>	[swɑ'qa]	's/he grinds it'
	/ʌw/	<i>lhwaklhwak</i>	[ʔwak'ʔwak]	'chop with machete (IDPH)'
	/ʃl/	<i>xlaká:n</i>	[ʃla'ka:n]	'they'

The three fricatives appear as the second member in coda clusters after stops (22) or nasals (23).

(22)	/ks/	<i>puks</i>	[puks]	'dark'
	/qs/	<i>tzu'tzó'qs</i>	[tzu'tzoqs]	'red'
	/qʃ/	<i>ponqx</i>	[ponqʃ]	'splash (IDPH)'
	/qʔ/	<i>laqlh</i>	[laqʔ]	'close together'
	/kʔ/	<i>tuklh</i>	[tukʔ]	'snap in pieces (IDPH)'
(23)	/mʎ/	<i>kimlh</i>	[kimʎ]	'wink (IDPH)'

The examples in (20)-(23) are not exhaustive but include all the combinations found in the ZT lexical database. The example in (23) is an ideophonic adverb and the only lexical item showing a coda sequence of a nasal plus fricative; the example may be an exception to the general phonotactics of the language.

The velar fricative /x/ has a uvular fricative allophone [χ]. The velar /x/ surfaces as [x] in word-initial position (24) and after the high vowels /i, u/ (25). The velar /x/ is realized as [χ] after the mid- and low-vowels /e, o, a/ in (26). These environments may condition the allophony by pronouncing the fricative further back following low vowels. The velar /x/ is also pronounced as a uvular [χ] in the presence of a uvular stop /q/ as in (27).

(24) /x/ → [x] / # __

<i>jéksa</i>	/ˈxeksa/	[ˈxeksa]	‘smell of chili’
<i>jini’</i>	/ˈxini/	[ˈxini]	‘smoke’
<i>já:ka’</i>	/ˈxa:kə/	[ˈxa:kə]	‘mamey, sapote’
<i>jú:ki’</i>	/ˈxu:ki/	[ˈxu:ki]	‘deer’

(25) /x/ → [x] / V [+high] __

<i>ski’ja’</i>	/ˈskixa/	[ˈskixa]	‘dirt’
<i>li:jikwa’</i>	/li:ˈxikwə/	[li:ˈxikwə]	‘frightening’
<i>li:skuját</i>	/li:skuˈxat/	[li:skuˈxat]	‘hoe’
<i>spujúju</i>	/spuˈxuxu/	[spuˈxuxu]	‘pointy’
<i>payúj</i>	/paˈjux/	[paˈjux]	‘handkerchief’

(26) /x/ → [χ] / V [+mid, low] __

<i>xajaja</i>	/ʃaxaxa/	[ʃaxaxa]	‘sound of waterfall’
<i>a’j</i>	/q̃x/	[q̃χ]	‘that’
<i>chejé:t</i>	/tʃeˈxe:t/	[tʃeˈχe:t]	‘hail’
<i>tej</i>	/tex/	[teχ]	‘road, path’
<i>choj</i>	/tʃox/	[tʃoχ]	‘now, today’
<i>tojó:n</i>	/toˈxo:n/	[toˈχo:n]	‘foot’

(27) /x/ → [χ] / q __

<i>ma’qjó:</i>	/maqˈxo:/	[maqˈχo:]	‘downhill’
<i>laqjúki’</i>	/laqˈxuki/	[laqˈχuki]	‘leg cramp’

The velar fricative is realized as [x] in word-initial position before all vowels, as in (24) and in syllable-initial position following high vowels, as in (25). The mid- and low-vowels preceding /x/ condition the pronunciation of the fricative further back in the velum realized as the uvular fricative [χ], as in (26). In some of these examples, the uvular fricative [χ] appears between mid and low vowels, although there are also monosyllabic words where [χ] appears in final position after mid and low vowels and is therefore the reason I propose the conditioning environment in (26). The examples in (27) also suggest the conditioning environment is the preceding phone. In citation form, the uvular fricative [χ] may also weaken to a more /x/-like phone in these environments indicating that the segment is underlyingly /x/ and the allophony may be dependent on rate-of-speech or speaker variability.

Most Totonac languages have two dorsal fricatives in allophonic variation. Lowland-Sierra and Misantla, for example, have a phonemic glottal /h/, while the Northern languages have a phonemic velar /x/ (Upper Necaxa: Beck 2011a). In Apapantilla Totonac, SIL fieldworkers were uncertain about the place of articulation of the dorsal fricative, described as having either a phonemic velar or uvular (Reid et al. 1968: 19, Reid & Bishop 1974, Reid 1991: 1). In ZT, I am proposing the uvular fricative as an allophone based on my auditory perceptions and subsequent phonological analysis of the patterns found in the data. In Papantla Totonac, the velar fricative /x/ has as an allophone the glottal fricative [h] before consonants and in final positions, and [x] before vowels (Levy 1990: 25). In Misantla Totonac, the glottal fricative /h/ has as an allophone [ɬ] in syllable-final position (MacKay 1994: 381). The proposal that the uvular [χ] in Zihuateutla Totonac is in allophonic variation with the velar /x/ may lend further support for the reconstruction of the proto-language proposed in Brown et al. (2011) and Davletshin (2008), who reconstruct both a velar *x and glottal *h fricative for Proto-Totonacan.

2.1.1.3 Affricates

The voiceless affricate phonemes are found in three places of articulation — alveolar /ts/, lateral-alveolar /tʎ/, and palatal-alveolar /tʃ/. The affricates appear in syllable-initial and medial positions in (28)-(30).

(28)	/ts/	<i>tza'tzá'n</i> <i>tzi'tzi'</i> <i>laqtzín</i>	[ts̥a'ts̥an] ['ts̥jts̥j] [laq'tsin]	'corn cob' 'warm' 's/he sees'
(29)	/tʎ/	<i>tli:lh</i> <i>qa'tlá'</i> <i>pixtli:</i>	[tʎi:l] [qa'tʎa] [pij'tʎi:]	's/he danced' 'big' 's/he sings'
(30)	/tʃ/	<i>chi:lh</i> <i>chi'chi'</i> <i>makchi'xít</i>	[tʃi:l] ['tʃi'tʃi] [maktʃi'fit]	's/he tied it up' 'hot' 'body hair'

Affricates do not appear in tautosyllabic clusters and only the lateral-alveolar affricate /tʎ/ is found in word-final position, mostly in lexical items borrowed from Nahuatl, as shown in (31).⁷

(31)	/tʎ/	<i>kaka:wátʎ</i>	[kaka:'watʎ]	‘cacao’
		<i>su:yá:tʎ</i>	[su:'ja:tʎ]	‘palm’
		<i>tumátʎ</i>	[tu'matʎ]	‘tomato’

The presence of the lateral affricate is distinctive for the Totonac branch of the Totonacan family, although it is reported to have been lost in some Totonac varieties, having merged with /ʎ/ in Upper Necaxa (Beck 2014) and with /t/ in Coahuilán (Devin Moore, p.c.) and Misantla Totonac (MacKay 1999: 37).

2.1.1.4 Nasals

The two phonemic nasal consonants are the bilabial /m/ and the alveolar /n/. The nasals appear in syllable-initial, medial, and final positions as in (32)-(33).

(32)	/m/	<i>ma'qamú:n</i>	[maqa'mu:n]	‘frentera’
		<i>li:mí:n</i>	[li:'mi:n]	‘death’
		<i>lakxtím</i>	[lak'ʃtim]	‘together’
(33)	/n/	<i>na:ná'</i>	[na:'nə]	‘grandmother’
		<i>li:ní:n</i>	[li:'ni:n]	‘death’
		<i>laqstín</i>	[laq'stin]	‘children, offspring’

Nasals appear in onset clusters following one of the fricatives, as in (34) and in coda clusters preceding a stop or fricative, as in (35). Nasals do not form syllabic nuclei.

(34)	/sm/	<i>smu'yó'nqo'</i>	[smu'jɔŋqɔ]	‘clean’
	/sn/	<i>sna:'qá:'</i>	[sna:'qa:]	‘s/he licks it’
	/ʎm/	<i>lhmukúku</i>	[ʎmu'kuku]	‘yellow’
	/ʎn/	<i>xnojót</i>	[ʎno'χot]	‘vein, nerves’

⁷ These Nahuatl stems can be found in the online Nahuatl dictionary (<https://nahuatl.uoregon.edu/content/welcome-nahuatl-dictionary>); here they are presented in the orthography used in this source: *cacahuatl* ‘cacao’, *zoyatl* ‘palm’, and *tomatl* ‘tomato’.

(35) /nk/	<i>lhonk lhonk</i>	[lɔŋk lɔŋk]	‘snoring (IDPH)’
	<i>tłhamank</i>	[tła'maŋk]	‘comal’
/mł/	<i>kimłh</i>	[kimł]	‘wink (IDPH)’

The example in (35) illustrates two ideophonic adverbs, one of which the nasal precedes a fricative which may also indicate that the sequence may be an exception to the phonotactics of the language in general.

Nasals undergo place assimilation with the following consonant as is typologically and articulatorily expected. The alveolar allophone [n] appears before vowels and alveolar stops and affricates shown in (36) and surfaces as a velar [ŋ] preceding a velar consonant, as in (37), a uvular [ɴ] preceding a uvular obstruent, as in (38) and as a bilabial [m] before bilabial consonants, as in (39).

(36) /n/ → [n] / __ V, C [+alveolar]

<i>wi'xinán</i>	/wiʃi'nan/	[wiʃi'nan]	‘you all’
<i>qo:ntát</i>	/qo:n'tat/	[qo:n'tat]	‘fat’
<i>tzi'swánlh</i>	/tsʃs'wanł/	[tsʃs'wanł]	‘good night’
<i>tansán</i>	/tan'san/	[tan'san]	‘buttocks’
<i>kinchik</i>	/kin'tʃik/	[kin'tʃik]	‘my house’

(37) /n/ → [ŋ] / __ C [+velar]

<i>tankákni'</i>	/tan'kakni/	[taŋ'kakni]	‘lower back’
<i>cha'nkát</i>	/tʃaŋ'kat/	[tʃaŋ'kat]	‘sugarcane’
<i>qe:'pánwa'</i>	/qe:'panwə/	[qe:'paŋwə]	‘rotten smell’

(38) /n/ → [ɴ] / __ C [+uvular]

<i>lhqónqa</i>	/'lqonqa/	['lqonqa]	‘urine (smell)’
<i>pa:tzanqá:</i>	/pa:tsan'qa:/	[pa:tsan'qa:]	‘s/he forgets’
<i>tanqa:lá:n</i>	/tanqa:'la:n/	[tanqa:'la:n]	‘spider’

(39) /n/ → [m] / __ C [+bilabial]

<i>minpeqén</i>	/minpe'qen/	[mimpe'qen]	‘your arm’
<i>tanpuxám</i>	/tanpu'ʃam/	[tampu'ʃam]	‘twenty’
<i>tu'tunpuxám</i>	/tʉtunpu'ʃam/	[tʉtumpu'ʃam]	‘sixty’
<i>makatanpú:lh</i>	/makatan'puł/	[makatam'puł]	‘crab’

The velar and uvular nasals are not found in contexts outside of these conditioning environments. Further evidence for the alternation is seen in (39), where the nasal consonants in the set are underlying alveolar nasals, since for example, the possessive

morpheme *min-* in for instance *minpeqén* ‘your arm’ undergoes nasal assimilation when prefixed to nouns that begin with other stop consonants, following the environments in (36)-(39), and is realized as the alveolar nasal elsewhere, as with vowel initial nouns (e.g. *mina'qxá:'q* [minəq'ʃə:q] ‘your head’). Similarly, in (39) the numerical terms include the numeral classifier prefix *tan-* used for counting humans or animals and is etymologically related to the body-part noun *táni'* ‘buttocks’ (see §3.3.3); the prefix undergoes nasal assimilation with the following consonant, and surfaces as the alveolar elsewhere. In citation form or slow careful speech, speakers may pronounce these nasals at the alveolar ridge.

2.1.1.5 Approximants

The approximants in ZT are the voiced lateral /l/, the palatal glide /j/, the labio-velar glide /w/, and the rhotic tap (r) found in Spanish loan words. Each phoneme has distinct distributional properties and is described individually below. The three approximants /l/, /j/, and /w/ are part of both Totonac and Tepehua phonological inventories and reconstructed for Proto-Totonacan in Arana Osnaya (1953), Brown et al. (2011) and MacKay and Trechsel (2018a,b).

The lateral approximant /l/ is found in syllable-initial positions, both word-initially and word internally, as shown in (40)-(41).

(40)	/l/	<i>lú:wa'</i>	['lu:wə]	‘snake’
		<i>laklé:'n</i>	[lak'le:n]	‘s/he owes it’
		<i>maklá</i>	[mak'la]	‘s/he finds it’
(41)	/l/	<i>a:li:stán</i>	[a:li:s'tan]	‘then, afterwards’
		<i>qe:lá't</i>	[qe:'lət]	‘wasp’
		<i>lhti'li'li'</i>	[lti'li:li]	‘round’

Additionally, the lateral approximant appears in onset clusters following one of the fricatives /s/ or /ʃ/, as shown in (42).

(42)	/sl/	<i>slí'twa'</i>	['slitwə]	‘straight, thin’
		<i>slipénqe'</i>	[sli'penqe]	‘smooth, silky’
	/ʃl/	<i>xla</i>	[ʃla]	‘s/he, it’

The lateral approximant is not used as a syllabic nucleus and is not found in complex codas. The lateral approximant /l/ is diachronically devoiced in word-final positions in certain morphophonemic environments shown in §5.2.1.2 and is not found in final-positions in the ZT lexical database.

The voiced labio-velar approximant /w/ also appears in syllable-initial position word-initially and word-internally, as shown in (43)-(44).

- | | | | | |
|------|-----|-----------------|-------------------------|--------------|
| (43) | /w/ | <i>wi'x</i> | [w _l j] | ‘you’ |
| | | <i>wa'</i> | [w _h] | ‘s/he eats’ |
| | | <i>wenqén</i> | [wen'qen] | ‘frog, toad’ |
| (44) | | <i>chuwá:</i> | [tʃu'wa:] | ‘today, now’ |
| | | <i>ki'wi'</i> | ['k _h wi] | ‘tree’ |
| | | <i>xima:wá'</i> | [ʃima:'w _h] | ‘fly’ |

The labio-velar approximant is found in onset clusters following a fricative, as in (45).

- | | | | | |
|------|------|-------------------|------------------------|----------------------------|
| (45) | /sw/ | <i>swilhtu</i> | ['swiltu] | ‘iguana’ |
| | /ʃw/ | <i>xwá:'ti'</i> | ['ʃw _h :tj] | ‘metate’ |
| | /ʔw/ | <i>lhwaklhwak</i> | [ʔwak'ʔwak] | ‘chop with machete (IDPH)’ |

The labio-velar approximant does not form complex codas.

The palatal glide /j/ occurs in syllable-initial and medial positions (46)-(47) and word-final position, as in (48).

- | | | | | |
|------|-----|----------------|-----------|-----------------|
| (46) | /j/ | <i>yaj</i> | [jaχ] | ‘hair’ |
| | | <i>ya:</i> | [ja:] | ‘stand’ |
| | | <i>ya:stá'</i> | [ja:s'ta] | ‘in-law’ |
| (47) | | <i>chuyá:</i> | [tʃu'ja:] | ‘s/he is crazy’ |
| | | <i>ti'yá't</i> | [tj'jət] | ‘earth, soil’ |
| | | <i>su'yú</i> | [su'ju] | ‘visible’ |
| (48) | | <i>xuy</i> | [ʃuj] | ‘mosquito’ |
| | | <i>xatzéy</i> | [ʃa'tsej] | ‘better that’ |

There are not many examples in the database with word-final /j/. Some Totonac languages have retained a final voiced /j/ in some lexical items, where others show the devoicing of the approximant in final positions. Apapantilla Totonac, like Zihuateutla, retains the final sonorant in some of these lexical items, such as *xuy* /ʃuj/ ‘mosquito’ (Reid & Bishop 1974).

Upper Necaxa Totonac also retains the final sonorant in forms such as *xatzéy* [ʃa'tsej], a subordinating adverb meaning something like ‘better that,’ but differs with *xuj* /ʃux/ ‘mosquito’ (Beck 2011a), where it is proposed to be found as a devoiced fricative in final position.

2.1.1.6 Rhotic Tap/Flap

The rhotic flap or tap (ɾ) is found intervocally in Spanish loan words, as seen in (49).

(49)(ɾ)	<i>morálh</i>	[mo'raɫ]	‘sack (<i>Sp.</i> morral)’
	<i>sé:ra</i>	['se:ra]	‘wax, honey (<i>Sp.</i> cera)’
	<i>kirisía:no</i>	[kiri'sia:no]	‘person, Christian (<i>Sp.</i> cristiano)’
	<i>kompári</i>	[kom'pari]	‘godfather (<i>Sp.</i> compadre)’

In other Totonac languages, the flap has been found to alternate with /l/ (Papantla: Levy 1987, Coatepec: McQuown 1990, Filomeno Mata: McFarland 2009). In the ZT database, there are some alternations for [ɾ] ~ [l] as in *kuchaláj* for Spanish *cuchara* ‘spoon’ and *Malin* for *María*, and alternations between [l] and [j] as in the ZT word *kuchi:lo* [ku'tʃi:lo] for Spanish *cuchillo* [ku'tʃiʝo] ‘knife’.

Rhotic phonemes are described as marginal phonemes in the Totonacan languages and are not included in the phonological inventories that have been proposed for Proto-Totonacan mostly because the phone is found only in borrowed lexical items in most languages of the family (Arana Osnaya (1953), Brown et al. (2011) and MacKay and Trechsel (2018a,b)). However, rhotics are present in ideophonic adverbs, as well as Spanish loan words, in both Tlachichilco (Watters 1987: 488-489) and Huehuetla Tepehua (Kung 2007a: 46), and in a few isolated words in other languages that do not seem to be borrowings (e.g. *ma'hatenkerén* ‘crab’ and *xpiró'h* ‘species of bird’ in Upper Necaxa Totonac (Beck 2011a)).

2.1.2 Vowels

Zihuateutla Totonac has five phonemic vowel qualities, two high vowels /i, u/, two mid vowels /e, o/, and one low central vowel /a/, each of which contrasts in terms of duration and laryngealization, expanding the vowel inventory to 20 phonemes. The vowels are

found in all positions; the contrast in vowel quality is seen in the (near-)minimal pairs in (50)-(57), which are further illustrated in Appendix B.

- | | | | |
|------|-----------------|------------|--------------------|
| (50) | <i>tli:</i> | [tʰi:] | ‘s/he dances’ |
| | <i>tlu:</i> | [tʰu:] | ‘s/he does’ |
| (51) | <i>yi:</i> | [ji:] | ‘s/he harvests it’ |
| | <i>ya:</i> | [ja:] | ‘s/he stands’ |
| (52) | <i>qe:pá:n</i> | [qe:ˈpa:n] | ‘wall’ |
| | <i>qe:pú:n</i> | [qe:ˈpu:n] | ‘exterior’ |
| (53) | <i>lha: ti:</i> | [ʎa: ti:] | ‘no one’ |
| | <i>lha: tu:</i> | [ʎa: tu:] | ‘none’ |
| (54) | <i>xka</i> | [ʎka] | ‘it bites’ |
| | <i>xqo:</i> | [ʎqo:] | ‘it stings’ |
| (55) | <i>peqtú’</i> | [peqˈtʉ] | ‘two (flat-thin)’ |
| | <i>pó’qtu’</i> | [ˈpoqtʉ] | ‘always’ |
| (56) | <i>cho’qó</i> | [tʃoˈqo] | ‘s/he stays’ |
| | <i>che’qé:</i> | [tʃeˈqe:] | ‘s/he washes it’ |
| | <i>chu’kú</i> | [tʃuˈku] | ‘s/he cuts it’ |
| (57) | <i>kukú:x</i> | [kuˈku:ʃ] | ‘sapodilla’ |
| | <i>kokúj</i> | [koˈkux] | ‘sand’ |

Furthermore, the contrast between plain, laryngealized, long and short vowels in Zihuateutla is illustrated with the (near-)minimal pairs, as in (58)-(77).

- | | | | |
|------|---------------|----------|----------------|
| (58) | <i>wa’</i> | [wɔ] | ‘s/he eats’ |
| | <i>wa:’</i> | [wɔ:] | ‘this here’ |
| (59) | <i>chi:</i> | [tʃi:] | ‘how, what’ |
| | <i>chi:’</i> | [tʃi:] | ‘s/he ties it’ |
| (60) | <i>páxa</i> | [ˈpaʃa] | ‘s/he bathes’ |
| | <i>páxa’</i> | [ˈpaʃa] | ‘you bathe’ |
| (61) | <i>túksa</i> | [ˈtuksa] | ‘s/he hits it’ |
| | <i>túksa’</i> | [ˈtuksa] | ‘you hit it’ |

- (62) *tantín* [tan'tin] 'excrement'
tantí:n [tan'ti:n] 'defecate'
- (63) *tze:'q* [tsɛ:q] 'hidden'
tze:k [tsɛ:k] 'low'
- (64) *cha'n* [tʃan] 'plant'
cha:'n [tʃa:n] 's/he arrives'
- (65) *lakapí'n* [laka'pɪn] 'stuffed tortilla'
lakapí:n [laka'pi:n] 'cheek'
- (66) *ská:ta'* ['ska:tə] 'lice'
sqá'ta' ['sqatə] 'child'
- (67) *chichi'* [tʃi'tʃi] 'dog'
chi'chi' [tʃi'tʃi] 'hot'
- (68) *wa:'yá:'* [wə:'ja:] 'hawk'
wá'ya' ['wə'ja] 'you eat'
- (69) *kilhni:* [kiɫ'ni:] 's/he scolds her/him'
kilhni' ['kiɫni] 'mouth'
- (70) *pó'qo'* ['pɔqɔ] 'stomach'
qó:'qo' ['qɔ:qɔ] 'mute person'
- (71) *to'qó:'q* [tɔ'qɔ:q] 'sitting'
qo:'qó:n [qɔ:'qo:n] 'be mute'
tojó:n [to'χo:n] 'foot'
- (72) *chejé:t* [tʃe'χe:t] 'hail'
che:qé:n [tʃe:'qe:n] 'thigh, leg'
che'qé:' [tʃe'qe:] 's/he washes it'
- (73) *lhkáká'* ['ɫkəkə] 'spicy, hot'
lhká:ka ['ɫka:ka] 's/he feels hot'
lhká:ka' ['ɫka:kə] 'they measured it'
- (74) *táma'* ['tamə] 'bed'
tamá:' [ta'mə:] 's/he lies down'
- (75) *ka:'taní:* [kə:ta'ni:] 's/he celebrates'
ka:'táni' [kə:'tani] 'celebration'

(76) *ta'qnu:* [təq'nu:] 'put on head'
tá'qnu' [təqnu] 'hat'

(77) *maqá:'n* [ma'qá:n] 's/he throws it'
maqán [ma'qan] 'hand'

Historically, the Totonac languages had three vowel qualities /i, a, u/ with contrastive length or laryngealization (McQuown 1942, Arana Osnaya 1953, Levy 1987, Davletshin 2008, Brown et al. 2011, 2014; MacKay and Trechsel 2018a,b; 2015). In the Tepehu languages (Tlachichilco, Huehuetla, and Pisaflores), the two high-vowels have been described as being in allophonic variation with [e, o] in environments adjacent to uvular or glottal obstruents that condition vowel lowering (Watters 1988, Kung 2007a: 31-32, MacKay & Trechsel 2010: 51-52, Brown et al. 2011, MacKay & Trechsel 2018a,b). One property of the languages within the Northern branch of Totonac is the innovation of the mid-vowels /e, o/ in contexts that are not adjacent to uvular or glottal obstruents. While mid-vowels in Zihuateutla Totonac may be infrequent outside of environments adjacent to uvular obstruents, the two mid-vowels /e, o/ appear in contexts not predicted by these conditioning environments as in (78). The two mid-vowels are also commonly found in Spanish loan words, such as in (79).

(78) *o:tanúlh* [o:ta'nuł] 'good evening (*Totonac* historically **qo:tanúlh*)'
le:'n [lɛ:n] 's/he takes it (*Totonac* *li:-* (INST) *a'n* 'go')'
tintzé: [tin'tse:] 'boss'
xumpé:pe [ʃum'pe:pe] 'cockroach'
lumé:t [lu'me:t] 'bottle'
ma:tzeyí: [ma:tse'ji:] 's/he heals it'
we:m [we:m] 'fall from a high place'
tze: [tse:] 'good, well'
xatzé:n [ʃa'tse:n] 'better, best'
kokúj [ko'kux] 'sand'

(79) *morálh* [mo'rał] 'sack (*Sp.* *morral*)'
kiristiano [kiri'stiano] 'person (*Sp.* *cristiano*)'
kapé:n [ka'pe:n] 'coffee (*Sp.* *café*)'
sé:ra [sɛ:ra] 'wax, honey (*Sp.* *cera*)'
lakasá:nto [laka'sa:nto] 'pupil of eye (*Tot.* *laka-* 'face, eye' *Sp.* *santo*)'
qinqase:láj [qinqase:'laχ] 'dry snout (*Tot.* *qinqa-* 'nose' *Sp.* *cera*)'

The contrast between the high and mid-vowels is also found in some minimal pairs in ideophonic adverbs in (80)-(83). Ideophones form a sub-class of adverbs that express onomatopoeic or synesthetic senses and show reduplicative patterns that are distinct to the class of ideophones (see §2.2.2 and §3.3.2.1).

- | | | | |
|------|---------------------|-------------------|---------------------------------------|
| (80) | <i>tilhtilh</i> | ['tiɫ 'tiɫ] | ‘popcorn popping’ |
| | <i>telhtelh</i> | ['teɫ 'teɫ] | ‘coins falling on floor’ |
| (81) | <i>lhunklhunk</i> | ['ɫɯŋk 'ɫɯŋk] | ‘someone sniffing’ |
| | <i>lhonklhonk</i> | ['ɫɯŋk 'ɫɯŋk] | ‘someone snoring’ |
| (82) | <i>lhululu</i> | ['ɫu 'lu 'lu] | ‘someone slurping a drink’ |
| | <i>lhololo</i> | ['ɫo 'lo 'lo] | ‘water being poured into a container’ |
| (83) | <i>lunklhlunklh</i> | ['ɫɯŋkɫ 'ɫɯŋkɫ] | ‘someone jumping’ |
| | <i>lonklhlonklh</i> | ['ɫɯŋkɫ 'ɫɯŋkɫ] | ‘heart beating’ |

The presence of the mid-vowels outside of environments adjacent to uvular phones in Zihuateutla may add further support to the reconstruction in Brown et al. (2011), who posit that the Northern Totonac languages split from the other languages in the Central branch based on the shared innovation of the mid-vowels /e, o/ in contrastive distributions.

In terms of phonological processes, high-vowels are lowered in environments surrounding uvular consonants and low vowels, as shown in (84)-(86).

- | | | | |
|------|--------------------------|-----------------|-----------------|
| (84) | <i>tanto:qó'xqa'</i> | /tantu:'qɔʃqɑ/ | [tanto:'qɔʃqɑ] |
| | tantu:-qó:'xqa' | | |
| | foot-skin' | | |
| | ‘skin of the foot’ | | |
| (85) | <i>lakape:qó:'xqa'</i> | /lakapi:'qɔʃqɑ/ | [lakape:'qɔʃqɑ] |
| | laka-pi:-qó:'xqa' | | |
| | face-chest-skin | | |
| | ‘skin of the face’ | | |
| (86) | <i>le:a'qa'tujúj</i> | /li:aqɑtu'jux/ | [le:aqɑtu'jux] |
| | li:- a'qa'tujúj | | |
| | INST-worry | | |
| | ‘S/he worries about it.’ | | |

These examples demonstrate the lowering of the vowels /i, u/ > [e, o] before the uvular obstruent in (84)-(85), and before a low vowel in (86). The vowels are high elsewhere, as

for example in *tantu:spulh* ‘toe’ (cf. (84)) and *kilhpi:n* [*kilh-* ‘mouth’ *pi:-* ‘chest’ *-n* (PRT)] ‘jawline’ (cf. (85)). The instrumental prefix *li:-* in (86) surfaces as [le:] before low vowels and before uvular consonants, and is realized as [li:] before high vowels and all other non-uvular consonants (see §6.1.2.2).

Furthermore, mid-vowels are sometimes lowered before uvular obstruents that result in alternate pronunciations for some speakers, as shown in (87).

(87)	<i>che'qé:'</i>	[tʃɛ'qɛ:] ~ [tʃa'qɛ:]	‘s/he washes it’
	<i>li:che'qxlá</i>	[li:tʃɛqʃ'la] ~ [li:tʃaʃqʃ'la]	‘s/he stumbles on it’
	<i>pu'tzé'nqe'</i>	[pɯ'tsɛNɣɛ] ~ [pɯ'tsaNɣɛ]	‘black’
	<i>sé'qsi'</i>	['sɛqsi] ~ ['saqsi]	‘sweet’

The alternation in the lowering of the mid vowel [e] > [a] in these environments may be rate-of-speech dependent or may be due to speaker or idiolectal variation; there are no examples thus far that show [u] > [o] in this environment although diachronically this conditioning environment is proposed to have led to the development of the two mid-vowels.

2.2 Stress

This section describes the pattern of stress in the four major lexical classes in ZT — nouns, adjectives, adverbs, and verbs. The stress patterns are characteristic of specific lexical categories, but for the most part primary stress is fairly predictable and regular, falling on the ultimate or the penultimate syllable for all lexical classes. Deviations and exceptions to these patterns for all lexical classes have been listed in the relevant sections below. Additionally, the stress patterns proposed in this section is based on my auditory perception of these lexical items in citation forms, which were at times embedded within a carrier phrase.

2.2.1 Nouns

The regular pattern for most nouns in ZT is to stress the penultimate syllable of nouns ending in a short vowel, and the ultimate syllable of nouns ending in a final heavy syllable, that is a syllable ending with a long vowel or closed syllable. This stress pattern is demonstrated in the monomorphemic underived nouns in (88)-(90).

(88) Penultimate stress in words ending with a short vowel

<i>pó:ti</i>	[ˈpo:ti]	‘boat’
<i>xwá:’ti’</i>	[ˈʃwɑ:tɪ]	‘metate’
<i>tza’qá’ta’</i>	[tsɑˈqɑtɑ]	‘dwarf, midget’

(89) Ultimate stress in words ending with a final closed syllable

<i>kokúj</i>	[koˈkux]	‘sand’
<i>lukút</i>	[luˈkut]	‘one’s bone’
<i>a’cháj</i>	[ɑˈtʃaχ]	‘ax’ (Sp.)

(90) Ultimate stress in words ending with a final long vowel

<i>tintzé:</i>	[tinˈtse:]	‘boss’
<i>wa:’yá:’</i>	[wɑ:ˈjɑ:]	‘hawk’
<i>xku’pú:’</i>	[kɥˈpu:]	‘crayfish’

Most derived or multimorphemic nouns follow the same regular stress pattern. Ultimate stress is placed on final heavy syllables (91)-(92) and penultimate stress is found on those that end in light syllables (93).

(91) [kiɫtamˈpa:n]

kiɫhtampá:n
 kiɫh–tampá:–n
 mouth–below–PRT
 ‘lip’

(92) [lakasikwaˈlan]

lakasikwalán
 laka–sikwalán
 face–god
 ‘pupil of the eye’

- (93) [lakape: 'qo:ʃqa]
lakape:qó:'xqa'
 laka-pi:-qó:'xqa'
 face-chest-skin
 'skin of the face'

Exceptions to this pattern include derived forms with the agentive nominalizer, a stress attracting suffix, that results in nouns that end in a light syllable with word-final stress, as shown in (94)-(96); the agentive suffix is added to verbs to derive nouns that express the AGENT of an action (see §4.3.2).

- (94) [tsapa 'nã]
tza'paná'
 tza'pa-ná'
 sew-AGT
 'seamstress'

- (95) [kɨʃu: 'ny]
ku'chu:nú'
 ku'chu:-nú'
 cure-AGT
 'doctor'

- (96) [ma:pi: 'ni]
ma:pi:ní'
 ma:pi:-ní'
 lay.eggs-AGT
 'hen'

Another exception to this pattern is found in some deverbal nouns. Deverbal nouns may be derived with the shortening and laryngealization of the final vowel of the verb stem accompanied by a leftward shift in stress. Some deverbal nouns that end in a light syllable follow the regular pattern of penultimate stress, as in (97) also shown in §4.3.1, however, there are some few exceptions, as listed in (98)-(99).

- (97) [ka: 'tani]
ka:'táni'
 ka:'táni'
 celebrate:DVB
 'celebration'

(98) [ma:ɬku:'jũ]
ma:ɬkuyú'
 ma:-lhuyú'
 CS-burn:DVB
 'moon, month'

(99) [qo:'lũ]
qo:lú'
 qo:lú:
 age:DVB
 'husband'

The deverbal nouns in (98)-(99) take a short and laryngealized final stressed vowel illustrating an idiosyncratic stress pattern.

Other exceptions to the predictable stress pattern are listed in (100)-(101). The nouns in (100) take ultimate stress on a final short laryngealized vowel. These nouns include a number of kinship, body-part, and animal terms as well as some lexical borrowings from Spanish, Nahuatl or other Mesoamerican languages. (101) shows penultimate stress on a noun that ends in a heavy syllable.

(100) <i>na:ná'</i>	[na:'nã]	'grandmother'
<i>pi:pí'</i>	[pi:'pĩ]	'older sister'
<i>ta:'tá'</i>	[tã:'tã]	'father'
<i>ya:stá'</i>	[ja:s'tã]	'sister/brother in law'
<i>kukustá'</i>	[kukus'tã]	'man's brother in law'
<i>te:kú'</i>	[te:'kũ]	'spirit, boss' (Nahuatl)
<i>chichí'</i>	[tʃi'tʃĩ]	'dog'
<i>chu:'tá'</i>	[tʃu:'tã]	'type of nut'
<i>ta'jná'</i>	[tãχ'nã]	'turkey'
<i>to'wá'</i>	[tõ'wã]	'stomach'
<i>xima:wá'</i>	[ʃima:'wã]	'fly'

(101) *xí:'kxi:'* [ˈʃi:kʃi:] 'bile, gall bladder'

The nouns listed in (98)-(101) are all the exceptional cases found in the lexical database showcasing that even though Totonacan languages in general are described as having a fairly regular and predictable stress pattern, there are still many exceptions to the generalization. It would be further interesting to observe how stress patterns are realized in connected speech in more naturalistic contexts.

2.2.2 Adjectives, Adverbs, and Ideophones

Stress in (derived and underived) adjectives follows regular patterns, appearing on the penultimate syllable in words ending in a short vowel (102), or the ultimate syllable of lexical items with heavy syllable (103). Of the 76 adjectives recorded in the database, there were no exceptions to this generalization.

(102) <i>qá'tla'</i>	['qat̪la̯]	‘big’
<i>pálha'</i>	['paɫa̯]	‘hard, strong’
<i>chí'chi'</i>	['tʃi̯tʃi̯]	‘hot’
<i>chichí'wa'</i>	[tʃi̯'tʃi̯wa̯]	‘smell of wet dog’
(103) <i>chaá:n</i>	[tʃaː'a:n]	‘ripe’
<i>ta:lhmá:n</i>	[taːɫ'ma:n]	‘up high, tall’
<i>lakstín</i>	[lak'stin]	‘small, little’
<i>a'ktzunáj</i>	[aktsu'nax̣]	‘small, short’

Adverbs also follow the same regular pattern, with stressed penultimate syllables in words ending in short vowels (104), and stressed ultimate syllables in words ending in closed codas (105), or long vowels (106). It is important to note that some adverbs express “property concepts” as in Thompson (1988) similar to adjectives (see §3.3.2).

(104) <i>pó'qtu'</i>	['poqtu̯]	‘always’
<i>sqó'qo'</i>	['sqoqo̯]	‘salty’
<i>lakatzúku'</i>	[laka'tsuku̯]	‘slowly’
(105) <i>li:púj</i>	[liː'pux]	‘sad’
<i>lhpi'pé:'q</i>	[ɫpi̯'peːq]	‘nervous, startled’
<i>kamakán</i>	[kama'kan]	‘done by hand’
(106) <i>qo:tanú:</i>	[qo:ta'nuː]	‘in the afternoon’
<i>chu:ntzá:</i>	[tʃuːn'tsaː]	‘like this’
<i>laqalí:</i>	[laqa'liː]	‘tomorrow’

One exception to this pattern includes a relatively common adverb, *wa'chí'* [w̩a'tʃi̯], translated into Spanish as *así* ‘like that’, which takes ultimate stress on a short vowel.

A subclass of adverbs, ideophonic adverbs, may be pronounced with equal weight on each syllable, or take the regular stress patterns (107)-(109). Ideophones that show full

reduplication of multisyllabic words may be pronounced with equal weight on each syllable, or take the default stress pattern on each reduplicated form (109).

(107) <i>lamama</i>	['la'ma'ma] ~ [la'mama]	‘fiery coals’
<i>qolhulhu</i>	['qo'lu'lu] ~ [qo'lu'lu]	‘knocking hard’
<i>lhtinini</i>	['tʰi'ni'ni] ~ [tʰi'nini]	‘static noise’
<i>xajaja</i>	['ʃa'χa'χa] ~ [ʃa'χaχa]	‘waterfall (sound)’
<i>lhololo</i>	['lo'lo'lo] ~ [lo'lolo]	‘water pouring’
(108) <i>kimlkhimlh</i>	['kiml'kiml] ~ [kiml'kiml]	‘person blinking’
<i>lamlam</i>	['lam'lam] ~ [lam'lam]	‘light flashing’
<i>lanlhlanklh</i>	['lanʔk'l'lanʔk] ~ [lanʔk'l'lanʔk]	‘applause’
<i>lheqlheq</i>	['leq'leq] ~ [leq'leq]	‘panting’
(109) <i>tlililintlililin</i>	['tʰi'li'lin'tʰi'li'lin] ~ [tʰili'lintʰili'lin]	‘phone ringing’
<i>lamalama</i>	['la'ma'la'ma] ~ ['lama'lama]	‘flame of fire’
<i>qalanklhqalanklh</i>	['qa'lanʔk'l'qa'lanʔk] ~ [qa'lanʔk'lqa'lanʔk]	‘crunching (food)’
<i>slamamslamam</i>	['sla'mam'sla'mam] ~ [sla'mamsla'mam]	‘sparkling glass’

Stress in ideophones has been described as being manipulated for prosodic effect in discourse for Upper Necaxa Totonac (Beck 2011a:53). However, the only examples of ideophones in the database for ZT that are contextualized in narratives are monosyllabic; all other examples have been elicited formally, where each syllable was given equal weight, or the regular stress pattern was applied by at least two different speakers in citation form or slow careful speech.

Another subclass of adverbs, deictic adverbs, express degrees of spatial deixis and show an exceptional stress pattern in that they always take ultimate stress in syllables that end in a short or long vowel, as seen in (110)-(111).

(110) <i>a'ntzá'</i>	[ʔn'tsɑ]	‘over there’
<i>a'jtzá'</i>	[ʔx'tsɑ]	‘here’
<i>a'na:nú'</i>	[ʔna:'nu]	‘over there’
(111) <i>a'nú:'</i>	[ʔ'nu:]	‘over there’
<i>wa:tzá:</i>	[wa:'tsa:]	‘here’
<i>a:'tzá:'</i>	[ʔ:'tsɑ:]	‘here’

All deictic adverbs, thus far, do not take the proposed ‘regular’ stress pattern. Deictic adverbs are widespread in texts and narratives and are described in §3.3.2.2. There are also some intensifying stress-attracting adverbial clitics, like =*tunká'* [tuŋ'ka] ‘very’ and =*tzá'*

['tsə] ‘now’, which take ultimate stress on a short vowel. While the data suggests that there are potentially many exceptions to the regular stress pattern, the tendency for primary stress is to land on the ultimate or penultimate syllable of the word.

2.2.3 Verbs

Inflected forms of verbs follow the regular stress pattern described above, where stress is assigned to a final heavy syllable, as in (112), or the penultimate syllable of verbs ending in a short vowel, as in (113).

(112) <i>taxtumá:'</i>	[taʃtu'mə:]	‘s/he is leaving’
<i>wa'kán</i>	[wə'kan]	‘it is eaten’
<i>taxtuní:'t</i>	[taʃtu'nj:t]	‘s/he has left’
<i>ma:ska:kí:lh</i>	[ma:ska:'ki:l]	‘s/he dried it out’
(113) <i>taxtuní:'ta'</i>	[taʃtu'nj:tə]	‘you have left’
<i>wá'ka'</i>	['wəkə]	‘it is eaten’
<i>páxli'</i>	['pəʃli]	‘s/he bathed’
<i>táxtu'</i>	['taʃtu]	‘you left’

Exceptions to the regular stress pattern are those verbs that take zero allomorph of the imperfective aspect. These stem-final verbs take stress on the final syllable, both with verb forms ending in short and long vowels, as in (114) and in closed syllables, as in (115).

(114) <i>li:wá</i>	[li:'wa]	‘s/he eats it’
<i>cho'qó</i>	[tʃo'qo]	‘s/he stays’
<i>xqa'qá:</i>	[ʃqə'qa:]	‘it dawns’
(115) <i>a'nán</i>	[ə'nan]	‘there is/exists’
<i>maká:'n</i>	[ma'kə:n]	‘s/he sends it’
<i>laqwán</i>	[laq'wan]	‘it breaks down’

Further discussion on verbs that take the zero allomorph of the imperfective aspect is in §5.2.1.1. Overall, primary stress is assigned to the ultimate syllable of any derived or underived stem-final verb, whereas the regular stress pattern applies to all other inflected forms.

In summary, stress in ZT is fairly regular and predictable, falling on the ultimate or the penultimate syllable for all lexical classes. In general, the default pattern for nouns,

adjectives, and most adverbs seems to stress the penultimate syllable in words ending in a light syllable that is, words ending in a short vowel and stress falls on the ultimate syllable of words ending in a heavy syllable that is, words ending in a long vowel or closed syllable, although there are also many exceptions documented at least in slow speech or citation forms. Two subclasses of adverbs show a slightly different pattern but in general primary stress seems to land on an ultimate or penultimate syllable. Ideophonic adverbs take the regular stress pattern or take equal weight on each syllable in citation forms, and deictic adverbs take final stress on both heavy and light syllables in both citation and connected speech. Stress on verbs follow the same regular stress pattern except for stem-final verbs, which take ultimate stress on the final (heavy or light) syllable of the stem.

2.3 Phrase-level Prosody

Some phonological processes in Zihuateutla Totonac occur at certain phrasal boundaries or phonological junctures. These processes include the epenthesis of a nasal or vowel between word boundaries (cf. §2.3.1), and the devoicing of vowels to mark prosodic boundaries correlated with a pause in speech (cf. §2.3.2). Another prosodic process at the phrasal level is the resyllabification of certain prefixes to a preceding word or particle in the phrase (cf. §2.3.3).

2.3.1 Phonological Junctures

In Zihuateutla Totonac, certain elements are inserted at word boundaries in connected speech. One of these is an epenthetic $\equiv i$ inserted at the end of some consonant-final lexical items preceding another word that begins with a consonant as in (116)-(118).⁸

⁸ A phonological transcription line in IPA has been added to each of the examples in this section on phrase-level prosodic processes.

(116) *Wani i'xpuská:t Maria lha: kapi'ti tzi:'sa.*
 [wani iʃpus'ka:t Maria ʎa: ka'piti 'tʃi:sa]
 wan-ni i'x-puská:t Maria lha: ka-pit=i tzi:'sa
 say-DAT 3POSS-woman Maria NEG OPT-leave:2SG:PFV=JUNCT night
 'His wife, Maria, said not to go out at night.' [FAS: Woodchopper 8]

(117) *Wa:má: tachiwini tu: wan nakwán...*
 [wa:'ma: tatʃi'wini tu: wan nak'wan]
 wa:má: tachiwín=i tu: wan na-i'k-wan
 this story=JUNCT NREL say FUT-1SG.SUB-say
 'This story that I'm going to say...' [Story of community: 1]

(118) *Mat e:'pus lha: máti maqni:li tzaamá: pus.*
 [mat e: pus ʎa: 'mati maq'ni:li tʃa'ma: pus]
 mat e:'pus lha: mat=i maq-ni:-lh=i tzaamá: pus
 QTV and well NEG QTV=JUNCT ALN-die-PFV=JUNCT that well
 'It's said, well, they did not kill that (snake).' [SLO: Cuentos 15]

Examples (116)-(118) demonstrate /i/-epenthesis in consonant-final words in connected speech. The exact conditions in which this phonological juncture appears require systematic analysis although it has been observed for several other languages in the family.

On vowel-final stems in ZT, the epenthetic segment found at junctures is a nasal that assimilates to the following consonant across the word boundary as in (119)-(121).

(119) *U:'tzá'n tu:n ka:'xwili:ni:'ti wa:má: i'xka:n sipéj.*
 [u:'tʃa'n tu:n ka:'xwili:'ni:'ti wa:'ma iʃ'ka:n si'peʃ]
 u:'tzá'=n tu:=n ka:-i'x-wili:-ni:'t=i wa:má: i'x-xka:n
 PRN.3SG=JUNCT REL=JUNCT PL.OBJ-PST-put-PF=JUNCT this 3POSS-water
 sipéj
 mountain
 'That is what formed the water on the mountains.' [Story of community: 2]

(120) *Chu: wa'chi'n pa:tle'qe:pán xla...*
 [tʃu: wə'tʃim pa:tʃe:qə:'paŋ ʃla]
 chu: wa'chí'=n pa:tle'qé:-pa=n xla
 PTCL like.this=JUNCT happen-RPT=JUNCT s/he
 'Like that, it happens again, he...' [RLP: Chameleon: 46]

(121) *Choj mat chi: i'xma:pín i'xkilhlukút lha: i'xwí:n...*

[tʃoχ mat tʃi: ɟʃma:ˈpín ɟʃkiɬluˈkut ɬa: ɟʃˈwi:n]
 choj mat chi: i'x-ma:-pi:≡n i'x-kilh-lukút
 today QTV PTCL PST-CS-lie.down≡JUNCT 3POSS-mouth-bone

lha: i'x-wi:≡n
 where PST-be≡JUNCT
 'Now, they say, (the snake) left the chewed bones where it was...'
 [SLO: Cuentos de un abuelito: 11]

Examples (119)-(121) show an epenthetic nasal appearing at the end of vowel-final words or particles from various lexical classes (relativizers, demonstratives, verbs, and adverbs), across word boundaries preceding lexical items that begin with obstruents and vowels. In (121), a nasal is also inserted at the prosodic phrase boundary (eg. *i'xwí:n* 'it was').

In connected speech, this phonological juncture may take the form of an epenthetic vowel plus nasal inserted at the end of a consonant-final word at word boundaries as in (122)-(124).

(122) *Lha: palájen taxta:pali:lh...*

[ɬa: paˈlaxɛn taʃta:paˈli:i]
 lha: paláj≡in taxta:pali:-lh
 NEG fast≡JUNCT change-PFV
 'He couldn't change quickly...' [RLP: Chameleon: 49]

(123) *Ki:nú ma:x xatzé lha: ma:x kati'lé:'ujun mat wankán.*

[ki:'nu ma:ʃ ʃaˈtse ɬa: ma:ʃ katɨˈle:ɥum mat wanˈkan]
 ki:nú ma:x xa-tze lha: ma:x ka-ti'-le:'n-uj≡in
 so maybe DTV-good NEG maybe OPT-POT-take:PFV-1PL.SUB≡JUNCT

mat wan-kan
 QTV say-IDF:IMPF
 'So, they say maybe it's better that we probably weren't able to take (the statue).'
 [Cuentos de un abuelito: 85]

(124) *I'xkilé:'nin nak nak nakpú:xqá kina:ná'.*

[ɟʃkiˈle:nin nak nak nakˈpu:ʃqa kina:'nə]
 i'x-kin-le:'n≡in nak=pú:xqá kin-na:ná'
 PST-1OBJ-take≡JUNCT LOC=river 1POSS-grandmother
 'My grandmother used to take me to the river.' [RVA: Cuentos 18]

The epenthetic syllable /in/ exhibits some vowel alternation and nasal assimilation with the following segment in the phrase. Nasal consonants and syllables containing nasals that

appear at certain word- or phrase-level junctures is observed in other Totonacan languages (Coatepec Totonac: McQuown (1940), Levy (2016), Ozelonacaxtla Totonac: Román Lobato (2008), Filomeno Mata Totonac: McFarland (2009), Coahuilán Totonac: Moore (2016)).

2.3.2 Phrase-final Devoicing/Elision

One phonological process in Zihuateutla that occurs at the end of a phrase or clause coinciding with a pause in speech is the final devoicing of a vowel or sonorant at the end of a word. One environment where the phrase-final devoicing of a vowel occurs is in an unstressed syllable on a vowel-final stem as in (125)-(127).

(125) *Wani i'xpuská:t Maria lha: kapí'ti tzi:'sa.*

[wani i'ʃpus'ka:t Maria l̥a: ka'p̥iti 'tʃi:s̥a]

wan-ni i'x-puská:t Maria lha: ka-pit̥=i tzi:'sa

say-DAT 3POSS-woman Maria NEG OPT-leave:2SG:PFV=JUNCT night

'His wife, Maria, says to him, do not to go out at night!' [FAS: Woodchopper 8]

(126) *Xtampí:n lú'xu' tanu:má:' kuchaláj.*

[ʃtam'pi:n 'lu'ʃu tanu:'ma: kutʃa'laχ]

i'x-tampí:n lú'xu' ta-nu:-ma:' kuchaláj

3POSS-under cloth INCH-in-lie spoon

'The spoon is under the napkin.'

(127) *I'xyá: i'xchiká'ni lha: a'má:' i'xkilhtún pú:xqa'.*

[i'ja: i'ʃtʃi'kani l̥a: a'm̥a: i'ʃkil'tu:n pú:ʃqa]

i'x-ya: i'x-chiká'n̥=i lha: a'n-ma:' i'x-kilhtún pú:xqa'

PST-stand 3POSS-house-PL.POSS=JUNCT where go-PROG 3POSS-edge river

'Their house stood where the edge of the river runs.' [FAS: Woodchopper 4]

The final unstressed vowel of the noun *tzi:sa* 'night' is devoiced at the end of the clause in (125). The phrase *xtampí:n lú'xu'* 'under the cloth' shows that the final unstressed vowel of *lú'xu'* 'cloth' is devoiced in (126). Final-vowel devoicing is observed at the end of the phrase with *i'xkilhtún pú:xqa'* 'the edge of the river' in (127). The devoicing of unstressed vowels in these examples marks a phrase- or clause-final prosodic boundary. The devoicing occurs after all voiceless obstruents, and the final consonant in the word or stem is aspirated or strongly released.

The marking of these prosodic boundaries at the end of the phrase or sentence are also found on consonant-final words that end with a stressed syllable. The phrasal boundary is marked by the final devoicing of a sonorant consonant (128)-(129) or the elision of a voiceless obstruent (130).

- (128) *Minpá laqatín kilhtamakúj taxtúlin puská:t a'mpá tama:wa:nán. Chá:'lin qá'tla' pu:stá:'n.*
 [mim'pa laqa'tij kilhtama'kux taj'tulim pus'ka:t am'pa tama:wa:'naŋ 'tʃa:lin 'qatla pu:s'ta:ŋ]
 min-pa laqa-tin kilhtamakúj taxtú-lh=ín puská:t
 come-RPT NUM.CLF-one day leave-PFV=JUNCT woman
 a'n-pa tama:wa:-nan chá:'n-lh=i=nak qá'tla' pu:stá:'n
 go-RPT buy-AP:IMPF arrive-PFV=JUNCT=LOC big store
 'There came another day that the woman left to go shopping again; she arrived at the big store.' [FAS: Shopping list 9]

- (129) *Kakimaxkí:lh dios chí:'k puwán.*
 [kakimaʃ'ki:l dios tʃi:'k pu'waŋ]
 ka-kin-maxkí:-lh dios chí: I'k-puwán
 OPT-IOBJ-give-PFV god PTCL 1SG.SUB-think
 'May God give me understanding.' [RVA: Cuentos 99]

- (130) *Li:púj li:púj juésa i'kli:sta'kní:t.*
 [li:'pux li:'pux 'xuesa i'kli:stak'ni:]
 li:púj li:púj juésa i'k-li:-sta'k-ni:t
 sad sad obligation 1SG.SUB-INST-grow-PF
 'It is sad, it is sad the way I have grown up.' [RVA: Cuentos 27]

The devoicing of the final nasal in (128)-(129) and the elision of the final stop in (130) occurs on a stressed syllable of a consonant-final word that coincides with a pause in speech marking a phrase- or sentence-final boundary.

2.3.3 Affix-shifting

Another phrase-level prosodic process in ZT is the shifting of certain prefixes leftward to the preceding word or particle in the phrase. This process has been observed mostly with the first-person agreement prefix *i'k-* and the past tense prefix *i'x-*, which may be found re-syllabified as the coda of a preceding word or particle (131)-(133).

(131) *Wa'chí' kiti'k puwán. Wa'chí' kiti'k pa:stá'ka'.*

[wa' tʃi ki tʃi k pu' waŋ wa' tʃi ki tʃi k pa:s' təkə]
 wa'chí' **kit=i'k** puwán
 like.this **PRN.1SG=1SG.SUB** think

wa'chí' **kit=i'k** pa:stá'k-a'
 like.this **PRN.1SG=1SG.SUB** remember-IMPF
 'That's how I think; that's what I remember.' [RVA: Cuentos 97]

(132) *Kakimaxki:lh dios chi:'k puwán.*

[kakimaʃ'ki:l dios tʃi:k pu' waŋ]
 ka-kin-maxki:-lh dios **chi:'=k** puwán
 OPT-1.OBJ-give-PFV god **PTCL=1SG.SUB** think
 'May God give me understanding.' [RVA: Cuentos 99]

(133) *Nu:n ti:'x a'nán. Tu:n pu:lanankáni análi: wa:má:.*

[nu:n tʃi:ʃ a' nan tu:m pu:lanəŋ'kani a'nali: wa:'ma:]
 nu:n **ti:'=x** a'nán tu:≡n pu:lanán-kan≡i anán-lh≡i wa:má:
 no **PTCL=PST** exist **NREL=JUNCT** habitat-PL.POSS=JUNCT exist-PFV=JUNCT this
 'Nobody was here; what was here first was this.' [Story of community: 6]

Example (131) demonstrates that the first-person singular prefix *i'k-* may shift leftward onto the preceding consonant-final pronoun *kit* and become the stressed syllable. The prefix *i'k-* shifts leftward onto the vowel-final particle *chi:* in (132). The past tense prefix *i'x-* shifts leftward onto the preceding vowel-final particle *ti:* in (133). This prosodic process of resyllabifying the prefix onto the coda of a preceding word or particle has only been observed with certain *VC* prefixes.

To conclude, the insertion of elements or processes that occur at phonological junctures across word boundaries, such as vowel and nasal epenthesis, glottalization, or lengthening effects found in the Totonacan languages is a general areal phenomenon in the Sierra. The most detailed descriptions of phrase-level prosodic boundaries in the Totonacan languages are found in Román Lobato (2008) for Ozelonacaxtla and in Levy (2016) for Coatepec. An epenthetic /i/ at word boundaries is described as occurring phrase-medially at the end of consonant-final words in Pisaflores Tepehua (MacKay & Trechsel 2013: 210), Filomeno Mata Totonac (McFarland 2009: 47), and Ozelonacaxtla Totonac (Román Lobato 2008: 37-38). In Coatepec, an epenthetic /i/ is sporadically inserted after /t/ at certain phonological boundaries although the context that conditions the insertion remains unclear (Levy 2016: 15).

Furthermore, the insertion of a prosodic nasal or syllable across word boundaries in ZT is an element that makes the language prosodically distinct from Upper Necaxa Totonac, which does not seem to have this feature. Reid and Bishop (1974) and Reid (1991) make no mention of epenthesis at junctures for Apapantilla. The insertion of the nasal at the end of vowel-final words or particles, however, has been observed in several other Totonac varieties (Coatepec Totonac: McQuown (1940), Levy (2016), Filomeno Mata Totonac: McFarland (2009), Ozelonacaxtla Totonac: Román Lobato (2008), Coahuatlán Totonac: Moore (2016)). For Coatepec, McQuown (1940) and Levy (2016) describe prosodic insertion as the prenasalization of a following non-continuant obstruent, and in Ozelonacaxtla, Román Lobato (2008) analyzes prosodic insertion as the prenasalization of the vowel in certain contexts. For Coahuatlán, Moore (2016) describes it as occurring on vowel-final demonstratives and relativizers. In Filomeno Mata, McFarland (2009: 48) writes that insertion occurs preceding a word-initial stop or affricate, creating a nasal-plosive cluster between words. The epenthetic syllable $\equiv in$, shown in §2.3.1 above, has also been observed in Ozenolacaxtla (Román Lobato 2008: 46).

Phrase-final boundaries marked by the devoicing of a final unstressed vowel are seen in Huehuetla Tepehua (Kung 2007a: 124), and Coatepec (Levy 2016), as is the devoicing of an entire unstressed syllable in this environment in Pisaflores (MacKay & Trechsel 2013: 206). Phrase-final boundaries in Totonacan have been described as being marked with the insertion of a glottal stop in Misantla (MacKay 1999), Ozelonacaxtla (Román Lobato 2008), and Coatepec (Levy 2016). Finally, the resyllabification of certain prefixes onto the coda of a preceding syllable appears in Huehuetla Tepehua on words with vowel-final syllables (Kung 2007a: 45). In Upper Necaxa, this phenomenon is seen with the resyllabification of the first-person singular $i'k-$, the past tense $i'x-$, and the future tense $na-$, prefix onto the preceding word.

In summary, ZT has a typical vowel and consonant inventory for the Northern Totonac languages. ZT, however, lacks in glottalized consonants that are found in one of its sister languages, Upper Necaxa, and typical of the Tepehua branch and the Mesoamerican region more generally. The vowel inventory has 5 vowel qualities that may further show contrasts in laryngealization and length. Primary stress in ZT is for the most part predictable, landing

in the penult or antepenult syllable of a word. Finally, ZT shows a number of prosodic properties that seem to be common in the Sierra and Mesoamerican region more generally, which are mostly unexplored and not well-understood.

3 Grammatical Preliminaries

This chapter presents the lexical and grammatical classes of Zihuateutla Totonac and covers topics on basic syntactic structures that will be useful to the reader for interpreting the examples in subsequent chapters. The lexicons of all known languages can be grouped into open and closed word classes. In line with typological characteristics of world languages, ZT has four open word classes, also referred to as lexical classes — nouns, verbs, adjectives, and a semi-open class of adverbs, all of which can be distinguished by morphological and distributional properties. These major lexical classes contain subclasses based on clusters of features, both functional and structural, that distinguish them from their more prototypical characteristics. Nouns, for example, includes a subclass of body-part terms (BPTs) that are inalienably possessed and refer to anatomy and parts of other objects. BPTs are highly pervasive but display morphological and distributional properties that serve a variety of functions distinct from regular nouns. Verbs are also formally divided into two main subclasses, dynamic verbs and stative verbs, based on their morphological patterns. Within these classes of dynamic and stative verbs, several subclasses are identified on phonological and morphological grounds, as presented in Chapter 5.

A language's lexicon also includes a number of closed word classes or grammatical classes. These words are not readily added to the lexicon, are smaller in size, and serve more grammatical functions. Pronouns in ZT, for instance, are used to substitute a noun or noun phrase and may constitute a diverse group of closed class words. Pronouns include several subtypes, such as personal, possessive, and interrogative. Furthermore, interrogative pronouns are heterosemous, as in Lichtenberk (1991), with a set of subordinating pronouns that serve to combine finite clauses — that is, these pronouns are semantically and etymologically related morphemes that have developed different morphosyntactic functions. Demonstratives and numerals appear within the noun phrase and may also function as anaphoric pronouns.

This chapter briefly introduces the reader to the class of nouns and verbs in ZT introduced in §3.1, although these two lexical classes will be dealt with in their own chapters. An overview of the basic syntactic properties is presented in §3.2. The order of major constituents is in §3.2.1 and the formation of copular clauses with nominal and

adjectival predicates in §3.2.2, all which show that word order in ZT is rather flexible. Section 3.3 presents the formal and functional properties of other lexical and grammatical categories. This chapter also addresses the two other main lexical classes, adjectives (see §3.3.1) and adverbs (see §3.3.2), illustrating each class and giving examples of their uses. The lexical class of adverbs includes two subclasses, ideophones (see §3.3.2.1) and deictic adverbs (see §3.3.2.2), which are formally distinguished based on their semantic, phonological, and morphological properties. The highly polysemous and heterosemous lexical sub-class of nouns referred to as body-part terms is introduced in §3.3.3 and their uses in locative predicates are presented in §3.3.3.1. A number of grammatical or closed lexical categories are described in §3.4, including pronouns — personal and possessive (see §3.4.1), demonstratives (see §3.4.2), numerals (see §3.4.3), negation (see §3.4.4), and interrogative particles (see §3.4.5). Other grammatical or functional elements include subordinating particles which function to combine finite clauses in a wide variety of ways (see §3.5).

3.1 Overview of Nouns and Verbs

Nouns and verbs in ZT are easily distinguished by their semantic, morphological, and distributional properties. Semantically, nouns have typical nominal denotations, including reference to persons, places, things, and abstract notions, while verbs refer to dynamic and stative affairs, including actions, processes, states, and events. Morphologically, nouns are distinguished from verbs by lacking inflectional morphology. Nouns are uninflected for case, gender, or noun class. Bare noun stems have what Corbett (2000) describes as “general number” — that is, the bare noun stem does not provide any information as to the number of entities involved, as in (134).⁹

⁹ Examples are given in the practical orthography which is described in Chapter 2. Abbreviations used in this thesis can be found on page viii. In this grammatical description, non-meaning bearing elements that are inserted at phonological junctures for prosodic or other purposes are indicated with the identity sign (≡), while clitics or clitic boundaries are marked with an equal sign (=).

(134) *chichí'*
chichí'
dog
'dog(s)'

Outside of context, the bare noun stem is ambiguous between a singular or plural reading. Nouns do take plural marking, but plural marking on noun stems is optional. When nouns are overtly marked for plurality, the plural marker surfaces as a suffix *-n*, as in (135). The optional plural suffix has a variety of allomorphs described in §4.2.

(135) *chichí'n*
chichí'**-n**
dog-**PL**
'dogs'

The marking of plural number on the noun stem is optional and, more commonly, the number of entities involved in an event or state of affairs is encoded on the verb stem, as shown in (141) below.

Nouns furthermore take possessive morphology. Within the possessive construction, the noun is inflectionally marked for the person of possessor on the head noun, as in the bolded prefix in (136).

(136) *i'xchichí'*
i'x-chichí'
3POSS-dog
'her, his, its, their dog(s)'

The plurality of the possessor, as well as the plurality of the possessed noun, is optionally marked. Possessed nouns that are not overtly marked for a plural possessor are therefore also ambiguous outside of context between a singular and plural possessor reading, i.e. 'his, her, its' or 'their', as shown in (136). Throughout this thesis, the ambiguity between a singular and plural reading outside of context in the number of the bare noun stem or number of possessor in possessive constructions is not indicated in the glosses.

Possessed nouns may be optionally marked for a plural possessor with the suffix *-ka'n* (PL.POSS), as shown in (137); the relevant part of the example has been bolded.

- (137) *i'xchichi'nká'n*
 i'x-chichí'-n-**ka'n**
 3POSS-dog-PL-PL.POSS
 'their dogs'

When the number of the noun and the number of the possessor are overtly marked, the nominal plural suffix *-n* appears before the plural possessor *-ka'n*, as in (137). The marking of nominal number and number of possessor at the same time, however, is textually infrequent, as described in §4.2.2.

Nouns may also function as the core arguments of the verb — the subject or object(s), as seen in (138).

- (138) *Kintzi:t i'xtá'qa chauj.*
 kin-tzi:t i'x-xta'qá chauj
 1POSS-mother PST-make.tortilla tortilla
 'My mother used to make tortillas.' [RVA: Cuentos 33]

The transitive verb *xta'qá* 'make tortilla' in (138) takes the noun *kintzi:t* 'my mother' as the subject and *chauj* 'tortilla' as the direct object.

Full noun phrases consist minimally of the head noun, as shown by the direct object example, *chauj* 'tortilla' in (138) above. Full noun phrases may also include a demonstrative, numeral, adjective, or possessor noun. The structure of the noun phrase (NP), for the most part, is fairly rigid with modifiers appearing before the noun, as seen in (139) and the possessor after, as shown in (140). Full noun phrases have been enclosed in square brackets [] and the head noun has been bolded in (139)-(140).

- (139) *Cha:'tín pu'tzá'nje' chichí' tamo'qóslí'.*
 [cha:'-tín pu'tzá'nje' **chichí'** tamo'qós-li'
 NUM.CLF-one black **dog** fall.down-PFV
 'The black dog fell.'

- (140) *Li:maqachi'pa:xnálh laqatín i'xa'qán kí'wi'.*
 li:-maqa-chi'pá:-x-nan-lh [laqa-tín i'x-**a'qán** kí'wi']
 INST-hand-hold-CNN-AP-PFV NUM.CLF-one 3POSS-**branch** tree
 'He supported himself with a tree's branch.' [FAS: Frog story 27]

Example (139) shows the canonical order of elements in the noun phrase, which is numeral + adjective + head noun. The entire noun phrase functions as the subject of the intransitive

verb stem *tamo'qos-* ‘fall down’. In (140), the canonical order of elements in the noun phrase is numeral + head (possessed) noun + possessor; the possessor always appears following the head noun. This full noun phrase functions as the object of the transitive verb *li:maqachi'pa:xnán* ‘support oneself on something’. Within the noun phrase, there may be some flexibility with adjectives that appear before or after the noun as described in §4.1.

In contrast to nouns, verbs are more complex. Typologically, ZT can be characterized as a polysynthetic and agglutinating, head-marking language. Verbs show agreement for tense, mood, aspect, voice, and the person and number of the subject and object, as shown in (141), where the morphemes that encode these categories have been bolded.

- (141) *Kinka:tamu'sumá:'ni'*
kin-ka:-ta–*mu'sú*–**ma:'-ni'**
1OBJ-PL.OBJ-3PL.SUB–kiss–**PROG-2OBJ**
 ‘They are kissing us.’

Example (141) shows that each meaning component is expressed by its own morpheme marked on the head verb in ways that are easy to parse. The third person plural subject is expressed with the prefix *ta-* (3PL.SUB) and a second person plural object with a combination of prefixes and suffixes on the verb stem, *kin-* (1OBJ) *ka:-* (PL.OBJ) and *-ni'* (2OBJ). This verb is further inflected for the progressive aspect with *-ma:'* (PROG) and for the present tense of the indicative mood marked by the absence of any other tense or mood marker (cf. §5.2).

While ZT has some bound verb roots and stems which require inflectional morphology to function as a predicate, most verb stems are free with the most morphologically simple and unmarked verb being the third-person singular form in the present imperfective of the indicative mood, as seen in (142).

- (142) *Mu'sú*.
 Ø–Ø–Ø–Ø–**mu'sú**–Ø
 PRES–IND–3OBJ–3SG.SUB–**kiss**–IMPF
 ‘S/he kisses her/him.’

The verb in bold in (142) is marked for tense, mood, aspect and third person participants by the absence of overt morphology, as conventionally indicated by the zero morpheme. In this grammatical description, zero-marked forms are merely intended as a heuristic means

of presenting the data. The zero marking used here follows Dahl who describes this as representing “an unmarked category [that] would be such a member of a grammatical opposition that has the less complex or (relative to a given grammatical description) the basic or non-derived form” (Dahl 1985: 19). The absence of the morphological marker encodes the expression of the particular inflectional category. The notation merely represents the absence of phonetic content which is meaningful since it is in grammatical opposition to a phonetically overt morpheme. The position of the zero affix is placed nearest to where other overt inflectional affixes of the same category would be expected to appear, but the representation of a zero affix is merely used for heuristic purposes. The marking of zero morphemes are only given in the morphological gloss in sections or examples where it is pertinent to the description; otherwise, zero or unrealized affixes have been left out of the morphological analysis or interlinearization.

The description of the morphology of the ZT verb in this thesis takes a structural approach to analyzing the verb stem. Verb roots may take a number of affixes each of which add a component of meaning to the state or event expressed by the verb. These affixes are categorized here as falling within inflection (see Chapter 5) or derivation (see Chapter 6). Bearing in mind that many categories are underspecified, suppletive, and idiosyncratic, a template for an “idealized” affix order of the ZT verb can be constructed, as in Figure 6. The first row of the figure shows that there are potentially up to 10 prefixal positions and up to 12 suffixal positions on the verb. The second row is categorized with a capital ‘I’ which signifies those categories that are more typically inflectional or with a capital ‘D’ marking those affixes that are more typically derivational. The template is shaded from the darkest which represents the most contentful or semantically loaded categories (i.e. verb root/stem) to the lightest representing the most grammatical affixes (i.e. agreement, TAM). The figure suggests that inflection and derivation are on a continuum with canonical inflectional categories generally appearing at the furthest ends of the verb and canonical derivation closer to the root, while intermediary types of both are found in between.

10	9	8	7	6	5	4	3	2	1	0	1	2	3	4	5	6	7	8	9	10	11	12	
I					D		D			(Root/ Verb stem) + Root (+ Verb stem)	D	I	D			I	I		D	I	I		
PST	1SUB	POT	PL.OBJ	3PL.SUB	RCP	RT	< *CS >	< INST >	ALN		< *CS >	*CS	AP	< RPT >	DSD	AMB	< IDF >	IMPF	ST.PL	< RPT >	< IDF >	1PL.SUB	PFV
FUT	1OBJ					PATH	< INST >	CMT	INTNS			DAT		TOT				PROG		DIST		2SG.SUB	
OPT								BPT										PF		PROX		2PL.SUB	2OBJ
								ALL															
								DCS															
								INCH															

Figure 6: Idealized verb template in ZT (The darkest shade represents the most contentful or lexical slot(s) while the lightest shade signifies the most grammatical or functional categories. The angled brackets < > symbolizes that the morpheme appears in either position. The * represents that the causative can be a prefix or a circumfix — the position of the prefixal portion for which is variable.)

The template in Figure 6 is a depiction of the verb under the idealized condition of being fully specified for each of the morphological affixes. The affixes appear within a fixed linear order where linguistic categories are neatly distinguishable. The more prototypical derivational categories generally appear closer to the root or stem and typically express participants or entities that are more central to the action or event denoted by the verb; this is represented by the prefixes in zones 1 through 5 and the suffixes in zones 1 through 6 in the verbal template. Prototypical inflectional morphology, however, is expressed more peripherally at the outer edges, typically in zones 6 through 10 for the prefixes and 7 to 8 and 11 to 12 for the suffixes. While the various categories of verbal affixes are described as falling neatly into inflection or derivation in this description, this dichotomy does not always neatly hold true. More precisely, the various affixes in ZT fall on different points of a morphological continuum with prototypical inflectional categories appearing together at the ends of the verb, and prototypical derivational categories appearing closer to both sides of the root, while other affixes seem to be intermediary types of both. The template is meant as a heuristic means of gaining a broader picture of the sequence of elements within the verb. Many affixes that appear between these two categories in the template, however, are functionally more gradient falling somewhere between inflection and derivation, e.g. the prefixes in zones 4 and 5 and the suffixes in 3 through 6 and 9 and 10. This indeterminacy between being strictly inflectional or derivational is seen in the section on voice constructs (see §5.4) and adverbial affixes (see §6.1.4), some of which show functional properties of both inflection and derivation.

In sum, nouns in ZT do not show much inflectional morphology and require no additional morphology to function within a phrase or clause. Bare noun stems express “general number” (Corbett 2000) being optionally marked for plurality. All nouns in ZT are possessable and within the possessive phrase, only the marking of the person of possessor is obligatory on the nominal head. Nouns can further appear within a noun phrase modified by numerals, demonstratives, or adjectives generally in the position preceding the head noun. The noun phrase can be substituted by pronouns, which similarly do not distinguish case. Noun phrase arguments, however, are commonly elided since the person and number of participants are inflectionally marked on the verb. Verbs, on the other hand, are morphologically complex and show agreement for tense, mood, aspect, voice, and any

event participants bearing a grammatical relation. An overview of properties of the verb phrase and basic syntactic structures are presented in the next section, however, a description of the morphology of nouns is covered in Chapter 4 and verbs in Chapter 5 and 6.

3.2 Basic Syntactic Structures

This section covers some of the basic syntactic structures in ZT that are relevant to the typological profile of languages, including characteristics of simple clauses, the order of clausal constituents, and copular clauses. As a polysynthetic and agglutinating, head-marking language, ZT uses a combination of prefixing and suffixing for inflection and derivation. Grammatical relations are marked by verb agreement for person and number of subject and object(s) following a nominative-accusative pattern. The most simple clause in ZT consists minimally of an inflected verb, as shown in (143)-(144).

(143) *I'ktaxtú.*

i'k-**taxtú**-Ø

1SG.SUB-**leave**-IMPF

'I leave.'

(144) *Kilaqtzilh.*

kin-Ø-**laqtzín**-lh

1OBJ-3SG.SUB-**see**-PFV

'S/he saw me.'

The intransitive verb *taxtú* 'leave' in (143) is inflected for a first-person subject with the prefix *i'k-* (1SG.SUB), while the transitive verb *laqtzín* 'see' is inflected for the first-person object with the prefix *kin-* (1OBJ) in (144). These examples illustrate the head-marking pattern on verbs with nominative-accusative alignment. The marking of the subject and object is accomplished by prefixing or suffixing depending on the person and number of participants, as described in §5.1. Third-person subjects and objects are marked by the absence of overt morphology, or via a zero affix.

There are some ditransitive verbs in ZT, but for the most part multi-valent verbs are formed with derivational morphemes, such as causatives and applicatives, which may combine with one another to form more complex stems, such as in (145).

- (145) *I'ka:ma:su'yuni'lh kisqá'ta' tzu'ma:ján.*
 i'k-ka:-**ma:-su'yú-ni'**-lh kin-sqá'ta' tzu'ma:ját-n
 1SG.SUB-PL.OBJ-CS-**visible-DAT**-PFV 1POSS-child woman-PL
 'I showed my son to the women.'

Causatives and applicatives in ZT are each associated with particular semantic roles. In (145), for example, the root *-su'yú* 'A is visible' is made transitive with two valency-increasing derivational morphemes. The causative prefix *ma:-* (CS) adds a syntactic subject that causes the event, while the dative suffix *-ni'* adds a syntactic object expressed by the noun *tzu'ma:ján* 'women', which is also marked on the verb with the suffix *ka:-* (PL.OBJ). Overt agreement for two objects is only seen when both objects are not third person, since third-person objects are marked by the absence of an overt marker.

The verb may also take a number of derivational affixes that modify the stem in adverbial- or aspectual-like ways, as shown in (146)-(147).

- (146) *Sqa'qa:'nani'qo:kani:t.*
sqa'qa:'nan-ni'-qo:-kan-ni:t
sweat-DAT-TOT-IDF-PF
 'He had been completely covered in sweat.'

- (147) *I'kpixtli:te:lhayá:uj.*
 i'k-**pixtli:-te:lha**-ya:-uj
 1SG.SUB-**sing-AMB-IMP**F-1PL.SUB
 'We go along singing.'

The bolded totalitative (TOT) suffix *-qo:* in (146) modifies the meaning of the verb stem by indicating that the event participant is totally or completely affected by the process denoted by the verb. The bolded ambulative (AMB) suffix *-te:lha* in (147) expresses the fact that the event signaled by the verb happens during motion, similar to the adverb '(go) along' in English. These affixes are highly productive and fairly regular and compositional in meaning, but are not obligatory categories of the verb.

Another important aspect of ZT grammar is the lack of case on nouns, as shown in (145) above, as well as the absence of a formal class of adpositions. Locative relations are instead

expressed with stative posture verbs (cf. §3.3.3) and body-part terms — a subclass of nouns with independent and dependent forms that express anatomy and parts of a whole — such as in the locative predicates in (148)-(149).

(148) *Naksipéj a'kpu:yá: pu:laktín kí'wi'.*

nak =sipéj	a'kpu :–ya:	pu:lak–tin	kí'wi'
LOC=mountain	head.crown –stand	NUM.CLF–one	tree

‘The tree is on top of the mountain.’ [MCC: TRPS #63]¹⁰

(149) *I'xta:pá:n pu:sá:nto ya: kí'wi'.*

i'x– ta:pá:n	pu:sá:nto	ya:	kí'wí'
3POSS– side	church	stand	tree

Lit. ‘The tree stands to the side of the church.’
 ‘The tree is beside the church.’ [FAS: TRPS #49]

The body-part root *a'kpu*:- ‘crown of the head’ in (148) combines with the stative posture verb *ya*: ‘stand’ to encode the location of one entity, *pu:laktín kí'wi'* ‘one tree,’ in relation to the other, *sipéj* ‘mountain,’ which is introduced into the clause with the general locative proclitic *nak*= discussed below in (150)-(151). In their independent forms, body-part terms are inherently possessed nouns, as in *i'xta:pá:n* ‘its side (of the body)’ in (149), which expresses the spatial location of one object *kí'wi'* ‘tree’ in relation to another *pu:sá:nto* ‘church’. The nominal complement expressing location appears in predicate-initial position — a common position for adverbs, although the locative complement may appear post-verbally as described in more detail in §3.3.3.1.

Locative complements may also be introduced with the locative proclitic *nak*= (LOC) on a noun stem; the clitic *nak*=, which can convey a wide range of adpositional meanings, is the closest morpheme ZT has to an adposition, as exemplified in (150).

(150) *Naktlamánk tojó:má:' skí:'ti'.*

nak =tlamánk	tojó:–ma:'	skí:'ti'
LOC=pot	be.immersed–PROG	fish

‘The fish is inside the pot.’

The intransitive verb *tojó*: ‘be immersed (in a container or liquid)’ has a valency of one in

¹⁰ Examples that are taken from staged elicitations or narratives have been labeled in square brackets containing the speaker’s initials, a title ID code, and the line number where it appears in the text. See Appendix A for the title ID code and archive of textual data used in this thesis.

(150) where the noun *tlamánk* ‘pot’ is introduced into the clause by the bolded locative clitic *nak=*. Locative adverbials introduced with *nak=* may appear in pre-verbal or post-verbal positions, as can be seen in (153) below.

The proclitic *nak=* (LOC) is phonologically dependent on a host and can attach to the noun it introduces, as in (148) and (150) above, and is attached to a verb as an enclitic, as shown in (151).

(151) *Cha:'lín qá'tla' pu:stá:'n.*
 cha:'n–lh=**nak** qá'tla' pu:stá:'n
 arrive–PFV=LOC big store
 ‘She arrived at the big store.’ [FAS: Shopping list 17]

In the excerpt from the narrative in (151), *nak=* is reduced to a nasal enclitic on the verb to introduce the full noun phrase *qá'tla' pu:stá:'n* ‘big store’ into the clause as a locative phrase.

Most clausal or predicate modifiers in ZT always precede the verb, as in the examples shown in (152)-(153).

(152) *Xánka' i'skúja kinta:tá'.*
xánka' i'x–skúj–a kin–ta:tá'
well PST–work–IMPF 1POSS–father
 ‘My father used to work well.’ [RVA: Cuentos 37]

(153) *Ponqx tojo:chá nakxká:n sqá'ta' e:' i'xchichí'.*
ponqx tojo:–chá nak=xká:n sqá'ta' e:' i'x–chichí'
IDPH immersed–DIST LOC=water child and 3POSS–dog
 ‘Splash, the child and his dog were immersed in water.’ [FAS: Frog Story 33]

Predicate modifiers include manner adverbs (152) and ideophonic adverbs (153), both of which appear in pre-verbal positions. The adverbial modifier in (152) appears before the verb, which is followed by the subject, showing the order of elements Adverb + Subject + Verb. The example in (153) also shows a locative phrase *nakxká:n* ‘in the water’, which shows a relative order of elements, Adverb + Verb + Locative + Subject. Even though most adverbs appear in pre-verbal position, as in (152)-(153), other lexical adverbs, such as temporal and locative adverbs may be found pre-verbally or post-verbally (see §3.3.2). Predicate adjectives and pronominal elements tend to be fronted as well (see §3.2.2).

Finally, phrases or clauses in discourse and narratives may be combined through

juxtaposition, that is by simply linking syntactic units of the same type without using any coordinators, as shown in (154).

- (154) *Tzukúka' lakapu'tzakán lakapu'tzakán lha: makláka'.*
 tzukú-ka' laka—pu'tza—kan laka—pu'tza—kan lha: maklá-ka'
 begin-IDF:PFV face—look—IDF:IMPF face—look—IDF:IMPF NEG find—IDF:PFV
 'They began to look for it and look for it but they did not find it.' [SLO: Cuentos 5]

The verb phrases in (154) comprise one intonational phrase and express a sequence of events that are linked together with no overt coordinator. The matrix verb *tzukú* 'begin something' takes the verb phrase *lakapu'tzá* 'look for something' as a verbal complement with no overt subordinating element or subordinating morphological marking on the verb.

The coordinating conjunction *e:'* 'and' in ZT functions to join simple clauses and phrases and is a borrowing from Spanish (Sp. *y*), as in the bolded element in (155) and (156).

- (155) *I'xi'kchiwinayá: e: i'xi'kpu:chaqé:ni'má:'.*
 i'x-i'k-chiwí-nan-ya: **e:'** i'x-i'k-pu:-che'qé:-nin-ma:'
 PST-1SG.SUB-say-AP-IMPF **and** PST-1SG.SUB-CNTR-wash-AP-PROG
 'I was talking (on the phone) and washing the dishes.'

- (156) *Kina:ná' i'xa'n ka:'takúxtu' i'xtzi:t e:' i'xta:tá'.*
 kin-na:ná' i'x-a'n ka:'-ta-kúxtu'
 1POSS-grandmother PST-go:IMPF PLC-DCS-weed:DVB

 i'x-tzi:t **e:'** i'x-ta:tá'
 3POSS-mother **and** 3POSS-father
 'My grandmother used to go to the corn field (with) her mother and father.'
 [RVA: Cuentos 5]

The coordinating conjunction *e:'* 'and' joins two clauses in (155) and two noun phrases in (156). Other clausal coordinators found in texts include the Spanish borrowings *tonces* 'and then' (Sp. *entonces*) and *pero* 'but' (Sp. *pero*).¹¹ These coordinators, however, do not seem to be widespread. Additionally, there is no verb morphology associated with subordination

¹¹ Research on lexical and grammatical borrowings, such as conjunctions, from Spanish into Mesoamerican languages can be found for Nahuatl (Uto-Aztecan) in Brylak et al. (2020), and in Yaqui (Uto-Aztecan), Tzotzil, Q'eqchi' (Mayan), and Otomi (Otomanguan) in Haspelmath and Tadmor's (2009) collection of loanwords in languages around the world.

in ZT. A rather common observation in discourse and narratives is to find a string of verbal predicates preceded (or followed) by adverbial modifiers, as shown in (157) below. Various subordinating particles and their functions and uses are presented in §3.5.

3.2.1 *Constituent Order*

The order of major constituents in Zihuateutla Totonac is probably best described as verb-initial (VO and VS) since it is rare to have both an overt nominal subject and nominal object in transitive clauses at the same time. Noun phrase arguments in narratives and natural discourse contexts are commonly elided and the person and number of participants are generally tracked by agreement on the verb, as shown in (143) and (144) above. The most common order in ZT texts is predicate-initial, the minimum constituent being just the verb.¹² The following excerpt from the Frog Story by one speaker is an example of a stretch of discourse illustrating predicate-initial order, as shown in (157). In these examples, the order of elements is indicated with the following notation: V = verb, S = subject, O = object, Adv = adverb, and Loc = locative.

¹² The order of copula clauses differs and is discussed in §3.2.2.

(157) *Tzi:'swánli'. Tamá:lh sqá'ta' nai'xtáma'. Tatukálh i'xchichí'. Chi: xqa'qá:lh, takí:'li sqá'ta' e:' la'qtzili xwanqén lha:tzá' tojo:ma:' lha: i'xmojo:ni:'t.*

(a) **V**

tzi:'swán-li'
night.fall-PFV

(b) **V S Loc**

tamá:-lh	sqá'ta'	nak=i'x-táma'
lie.down-PFV	child	LOC-3POSS-bed

(c) **V S**

ta-tuká-lh	i'xchichí'
DCS-go.up-PFV	3POSS-dog

(d) **V, V S**

chi:	xqa'qá:-lh	takí:'-lh=i	sqá'ta'
PTCL	dawn-PFV	get.up-PFV=JUNCT	child

(e) **V O V, V**

e:'	la'qtzin-lh=i	i'x-wanqén	lha:=tzá'	tojo:-ma:'
and	see-PFV=JUNCT	3POSS-frog	NEG=now	inside-PROG

lha:	i'x-mojo:-ni:'t
where	PST-put.down-PF

'Night has fallen. The boy lied down on his bed. The dog went up. When it dawned, the boy got up and he saw his frog was not inside where he had put it.' [FAS: Frog story 3-5]

The order of constituents is verb initial followed by any subject or object noun phrases when they are not elided. The example in (157) also shows a string of verbal predicates being used to tell the sequence of events in the narrative. This predicate-initial (VS or VO) order of constituents supports Dryer's (1997) proposal of collapsing the six-way word order typology with one based on two binary parameters (VS/VO versus SV/OV). Dryer's alternative typology is meant to account for the position of subject and verb in intransitive clauses, and subject and object in languages like ZT that frequently have elided noun phrase arguments in discourse. Coordinators and subordinating particles, as in (157), are also used, although no verb morphology is associated with subordination.

In textually rarer cases where both object and subject are overt, the order of major constituents is flexible, and clauses in ZT may potentially display all possible orders of

verb (V), subject (S), and object (O). The most common order of constituents in which all participants are overtly expressed by noun phrases maintains a verb-initial order, as seen in (158)-(159).

(158) **V LocP S O**

Pu'tzálh nai'xlhúku: sakáj sqá'ta' i'xwanqén.

pu'tzá-lh nak=i'x-lhúku: sakáj sqá'ta' i'x-wanqén
 look-PFV LOC=3POSS-burrow gopher child 3POSS-frog

'The child looked for his frog in the gopher's borrow.' [FAS: Frog story 17]

(159) **Adv V O S**

We:m ma:tana'pú:lh sqá'ta' jú:ki'.

we:m ma:-tana'pú:-lh sqá'ta' jú:ki'
 IDPH CS-be.at.bottom-PFV child deer

'The deer made the child fall to the bottom of the hill.' [FAS: Frog story 31]

The example in (158) shows the transitive verb *pu'tzá'* 'look for X' is followed by an oblique locative phrase, *nai'xlhúku: sakáj* 'in the gopher's borrow'. The subject *sqá'ta'* 'child' follows the verbal predicate and precedes the object, *i'xwanqén* 'his frog', demonstrating the relative order of major constituents as VSO. The transitive verb *ma:tana'pú:* 'A causes X to be at the bottom' in (159) is followed by the object noun phrase *sqá'ta'* 'child', which precedes the subject *jú:ki'* 'deer' making the order of constituents VOS. Ideophonic adverbs (Adv), such as *we:m* in (159), tend to appear in clause- or predicate-initial positions.

Full subject and object noun phrases can also appear clause-initially, as in (160)-(161).

(160) **S V O**

Tantú' puská:n ka:kukpu'tzama:'ka' i'ská:ta'kán.

tan-tu' puská:t-n ka:-kuk-pu'tzá-ma:'-ka'
 NUM.CLF-two woman-PL PL.OBJ-head-look.for-PROG-IDF:PFV

i'x-ská:ta'-kan

3POSS-lice-PL.POSS

'Two women were looking for their head lice.' [MCC: Reciprocal & Situation Types 11]

(161) **O V S**

Tatu:nú:t tun ti'maxkí:ni' milaqaqásni' kawálh chichí'.

tatu:nú:t [tu:≡n ti'-maxkí:-ni' min-laqaqásni']
shoe NREL≡JUNCT POT-give:IMPF-2SG.OBJ 2POSS-family.member

ka:-wá-lh chichí'
PL.BJ-eat-PFV dog

‘The dog was going to eat the shoes your cousin would give you.’

(162) **O S V Loc**

Cha:'tintzá' xasqá'ta' le:'lh nai'xchik.

cha:'-tin=tzá' xa-sqá'ta' le:'n-lh nak=i'x-chik
NUM.CLF-one=now DTV-child take-PFV LOC=3POSS-house

‘The boy took one (frog) now to his house.’ [FAS: frog story 44]

Example (160) shows a mono-transitive verb *pu'tzá* ‘look for’ with the order of constituents SVO. The mono-transitive verb *pu'tzá* ‘look for X’ in (161) takes the noun *chichí'* ‘dog’ as the subject and the noun *tatu:nú:t* ‘shoe’ as the object, which is modified by the relative clause introduced with *tu:* (NREL); the relative clause is marked in square brackets. The subject *chichí'* ‘dog’ appears after the main verb *wa* ‘eat’, resulting in the order OVS. Example (162) illustrates an object-initial predicate, *cha:'tín* ‘one (animal)’ followed by the agentive subject *xasqá'ta'* ‘the boy’ followed by the verb *le:'n* ‘s/he takes it’.¹³ Subject-initial and object-initial predicates like those illustrated in (160)-(162) may perform topic-setting or focalized functions. Additionally, subjects or objects expressed with pronouns generally tend to appear in clause- or predicate-initial positions, described in §3.4.1.

3.2.2 *Copula Clauses*

Copula clauses, or non-verbal predicates as in Overall et al. (2018) consist of a clause that “lacks a verb entirely or that have a semantically empty or reduced verb (i.e. a copula), which serves primarily as a means of indicating to the listener that the nucleus of the predicate is a non-verbal element” (Overall et al. 2018: 2). Copula clauses, or non-verbal predicates, in ZT take two different forms described in Overall et al. (2018: 3-4) as a “zero copula construction” or a “verbal copula”, depending on the TAM of the predicate. The

¹³ The numeral which functions as an anaphor in (162) appears with a stress-attracting enclitic =*tzá'* ‘now’, which can be found on verbs, adverbs, adjectives, and some grammatical particles as shown in §3.5.3.

zero copula construction in ZT appears with nominal and adjectival predicates that take a present imperfective indicative reading. The copula construction is formed by merely juxtaposing the subject NP with a nominal or adjectival predicate and no overt copula. Copula clauses with a nominal predicate in the present imperfective are illustrated in (163)-(164).

(163) *Tintzé: u:'tzá'*
 tintzé: u:'tzá'
 boss PRN.3SG
 'She is the boss.'

(164) *Kit puská:t*
 kit puská:t
 PRN.1SG woman
 'I am a woman.'

The copula clauses in (163)-(164) show that the order of the subject and nominal predicate is flexible, at least in elicitation. Constituent order in ZT is commonly predicate initial, as the structure in (163), while the order in (164) is more commonly found in focalized or contrastive constructions that front pronominal subjects. In naturalistic discourse, pronouns may tend to be found in pre-verbal or focalized positions.

Copular clauses formed with an adjectival predicate similarly lack an overt copula in the present imperfective of the indicative mood, as in (165)-(166), which show a subject NP juxtaposed with an adjective.

(165) *Kapénwa' i'xyáj Jonás*
 kapén-wa' i'x-yaj Jonás
 coffee-SEM 3POSS-hair Jonás
 'Jonas's hair is coffee-colored.'

(166) *Wa:má:' tlamánk sá:sti'*
 wa:má:' tlamánk sá:sti'
 this pot new
 'This pot is new.'

The examples in (165)-(166) demonstrate that the order of the subject and predicate adjective is also flexible, again, at least in elicitation. Copula, as well as focalized, constructions in ZT require a deeper and systematic look into the various forms and

functions of these predicates. The left-dislocation or fronting of arguments when focalized is supposed to be a common property of Totonacan languages (Beck, to appear) so this is a relatively unexplored area worth investigating within discourse contexts.

Non-verbal predicates in ZT are also formed with a “verbal copula” in the sense of Overall et al. (2018). When the verb is in any other aspect, tense, or mood, copular constructions take an overt copula verb, *wan* ‘be’, as seen in the bolded verbs in (167)-(169).

(167) *Chu:ntzá: ma:x skalá'jwa' li:wamá: wa:má:' kilhtamakúj.*

chu:ntzá: ma:x skalá'jwa' **li:-wan-má:** wa:má:' kilhtamakúj
 like.this maybe delicate **INST-be-PROG** this planet
 ‘That’s probably why this planet is so delicate.’ [SLO: Cuentos 46]

(168) *Kimaqtama:wá:lh laqatín kwayúj tu: kilá xwaní:'t.*

kin-maq-tama:wá:-lh laqa-tin kwayúj tu: kilá **i'x-wan-ní:'t**
 1OBJ-ALN-buy-PFV NUM.CLF-one horse NREL mine **PST-be-PF**
 ‘She bought the horse that had been mine.’

(169) *Kí'klhwa' kawán chi'xkú' lha: kinti'maxkí:lh tumí:n.*

kí'klhwa' **ka-wán** chi'xkú' lha: kin-ti'-maxkí:-lh tumí:n
 bad **OPT-be** man NEG 1OBJ-POT-give-PFV money
 ‘If the man were bad, he would not give me money.’

The copula verb, *wan* ‘be’, is used in the progressive aspect in (167), in the past perfect in (168), and in the optative mood in (169). The examples in (167)-(169) further illustrate that when an overt copula is present, the complement precedes the copula verb, which seems to be a common trend in the Totonacan languages (Beck 2017a: 5).

To summarize §3.2, verbs in ZT are characterized as head-marking, polysynthetic and agglutinating, using both prefixes and suffixes for inflection and derivation. The simplest clause consists minimally of the verb, or in the case of non-verbal predicates, the subject plus nominal or adjectival complement. The order of major constituents is flexible, although the preferred order seems to be verb-initial followed by subject or object noun phrases. Copular clauses may show variable constituent order and are formed by the absence of an overt copula verb only when the construction is in the present imperfective of the indicative mood. Adjectives in ZT are nominal modifiers that appear within the noun

phrase and in copula clauses. Adverbs are a large diverse class of predicate modifiers that commonly appear in predicate initial positions but may also appear in various positions within the clause. The following section §3.3 presents the morphology and distribution of adjectives, adverbs, and a subclass of nouns known as body-part terms, as well as introducing the reader to other grammatical subclasses in ZT, such as pronouns, demonstratives, numerals, negation, and interrogatives. This section further includes subordinating particles that form more complex clauses in the language.

3.3 Other Lexical Classes

This section presents an overview of other lexical and grammatical classes in Zihuateutla Totonac. In addition to nouns and verbs, ZT has a formal class of adjectives and one of adverbs. Section 3.3.1 presents a description of the lexical class traditionally defined as adjectives. Distinguishing adjectives from other lexical categories in ZT is important because some linguists have argued Totonacan lacks a class of adjectives (Aschmann 1940, MacKay 1999), or that adjectives constitute a closed class (Levy 1992b). Adjectives in ZT, however, are best thought of as representing an open class of nominal modifiers. They express a wide range of “property concepts” (Thompson 1988) and are found in noun phrases and copular clauses.

Adverbs are formally distinguished from other lexical classes by functioning as predicate modifiers described in §3.3.2. Adverbs are a semantically diverse class that include typical adverbial notions, such as TIME, SPACE, and MANNER; however, they may also convey property concepts, which are more typically expressed by adjectives in other languages. Two sub-classes of adverbs, ideophones and deictic adverbs, are distinguished by their phonological, morphological, and semantic properties. Additionally, section 3.3.3 introduces the reader to the class of body-part terms in ZT, which is a highly polysemous and heterosemous sub-class of nouns that incorporate with verbs, adjectives, adverbs, and other nouns. Body-part terms are used in expressions of spatial relations, as illustrated in §3.3.3.1, and have many important discourse functions. Body-part terms incorporated with verbs, for example, may be used to introduce certain case roles or track referents, which are discussed in more detail in §6.1.5.

A number of closed grammatical subclasses are described in §3.4. The morphology of personal and possessive pronouns make distinctions in person and number but not case (cf. §3.4.1). A class of demonstratives express spatial deixis and appear within the noun phrase or may function as anaphors (see §3.4.2). Numerals, which are formed from a bound numeral root prefixed with one of 35 classifiers — many of which are etymologically related to body-part roots, have a variety of functions (see §3.4.3). Negative clauses are formed with a negative particle in pre-clausal position, similar to the position of adverbs (cf. §3.4.4). Polar questions are marked with a rise in intonation, while other interrogative structures are formed with an interrogative pronoun and an interrogative particle on the left-most edge of the clause (see §3.4.5); these pronominal particles are further heterosemous with a set of subordinators, which are described in §3.5. Subordinating particles, such as relative pronouns as in §3.5.1, complementizers as in §3.5.2, and subordinating adverbs and other particles as in §3.5.3, appear as the left-most element of the finite clause they introduce.

3.3.1 Adjectives

This section focuses on the distribution and morphology of adjectives. Adjectives in ZT comprise a fairly large class of nominal modifiers that express property concepts (Thompson 1988), such as physical properties, dimension, age, color, human propensities and values. Adjectives are found modifying nouns within the noun phrase, as in (170)-(171).

(170) *Cha:'lh nakqá'tla' pu:stá:'n.*
 cha:'n-lh nak=**qá'tla'** pu:stá:'n
 arrive-PFV LOC=**big** store
 'She arrived at the big store.' [FAS: Shopping List 17]

(171) *Cha:'tín pu'tzá'nje' chichí' tamo'qósli'.*
 cha:'-tín **pu'tzá'nje'** chichí' tamo'qós-li'
 NUM.CLF-one **black** dog fall.down-PFV
 'The black dog fell.'

The bare adjectives in bold precede the nouns that it modifies in these examples. The order of the noun phrase in (171) illustrates a canonical order of elements, (numeral) + (adjective) + noun, where the modifiers are optional components of the phrase (see §4.1).

Adjectives may be prefixed with the determinative *xa-*, a prefix that signifies a definite referent that has the property denoted by the adjective (see §3.3.1.2 below). Adjectives prefixed with the determinative may either precede (172) or follow (173) the noun they modify.

- (172) *Xkili:mini xaqa'tla'tzá' asenet. A'kxníka' wa'chí' i'kli:sta'kní:t.*
 i'x-kin-li:-min-ni **xa-qa'tla'=tzá'** asenet a'kxníka'
 PST-1OBJ-INST-come-DAT **DTV-big=now** type.of.fruit(?) when

 wa'chí' i'k-li:-sta'k-ni:t
 seem 1SG.SUB-INST-grow-PF
 'She used to bring me big fruit; that's how I had grown up.' [RVA: Cuentos 26]

- (173) *I'ktama:wá:lh laqatín taqe:nú:t xasnapápa.*
 i'k-tama:wá:-lh laqa-tin taqe:nú:t **xa-snapápa**
 1SG.SUB-buy-PFV NUM.CLF-one shirt **DTV-white**
 'I bought a white shirt.'

The difference in meaning between the two orders of the noun phrase is uncertain, except that (172) is taken from a personal narrative and (173) was elicited formally and may be a calque from Spanish. Bare adjectives after the noun do not appear in the database, although this may very well be a gap in the dataset as this order (without the determinative) is found in other Totonac languages (Upper Necaxa Totonac: Beck 2004: 17).

More importantly, adjectives bearing the determinative *xa-* may be used pronominally as the argument of the verb, as seen in (174).

- (174) *I'kla'qa'tí a'jmá:' xastalá:nqa'.*
 i'k-la'qa'tí a'jmá:' **xa-stalá:nqa'**
 1SG.SUB-like this.here **DTV-white**
 'I like this white one.'

The *xa*-adjective *xastalá:nqa'* meaning something like the 'white (one)' in the example is used anaphorically and has a nominal referent that is recoverable from discourse. The bare adjective is not used pronominally nor is found in this position.

In addition to appearing within the noun phrase and pronominally with *xa-* (DTV), adjectives also appear in non-verbal predicates or copular constructions, as in (175)-(177).

(175) *Tzamá: tlamánk lha: smu'yó'nqo'.*

tzamá: tlamánk lha: **smu'yó'nqo'**
 that pot NEG **clean**
 'That pot is not clean.'

(176) *Li:jíkwa' lhpi'né'nqe' lú'xu'.*

li:-jíkwa' **lhpi'né'nqe'** lú'xu'
 INST-fear:DVB **red** cloth
 'The clothes are shockingly red.'

(177) *Sa'ká'ka' tawanqó:lh xlakáni xmakniká'n.*

sa'ká'ka' ta-wan-qo:-lh xlakáni=i i'x-mákni'-ka'n
white 3PL.SUB-be-TOT-PFV PRN.3PL=JUNCT 3POSS-BODY-PL.POSS
 'Their bodies were all completely white.' [RLP: Chameleon 28]

The predicate adjectives do not take an overt copula when in the present imperfective, as in (175)-(176). In (175), the subject of the predicate adjective appears in clause-initial position, whereas in (176), the subject is in final position. An overt copula is used with the totalitative verb stem *wan*, which roughly means 'X is completely Y' in (177).

The next section focuses on the morphology of adjectives by first illustrating those affixes that have more inflectional functions and then those that are more derivational. In terms of inflectional morphology, adjectives display non-prototypical inflectional categories in the sense that these categories are, many times, optionally expressed. Adjectives, for example, optionally agree in number with the noun they modify (see §3.3.1.1), and are used both as modifiers and pronominally when prefixed with the determinative *xa-* (see §3.3.1.2). Furthermore, many adjectives in the database are underived; however, there are some processes that form adjectives from other lexical classes. The deverbalizer *-n(i')*, which forms nouns from verbs, also creates adjectives from verb bases (see §3.3.1.3). The semblative suffix *-wa'* derives adjectives from nouns, adverbs, and other adjectives (see §3.3.1.4). Body-part morphemes form new adjectival stems as is described and illustrated in §3.3.1.5.

3.3.1.1 Adjectival Plural

Adjectives in ZT optionally agree in number with the nouns they modify, taking the adjectival plural prefix *lak-* (APL), as in (178)-(179).¹⁴

(178) *Laki'lha chu:ntzá: mat i'xlakanká'n misini:'n.*

lak-kí'lha chu:ntzá: mat i'x-lakan-ka'n misin-ni:'n
 APL-round like.this QTV 3POSS-face-PL.POSS jaguar-PL
 'The jaguar's faces are round like this.' [RVA: Cuentos 13]

(179) *Misín li:jikwa'ni:'ti misín. Lakta:lhma:n mat misín.*

misín li:-jikwan-ni:'t≡i misín **lak**-ta:lhma:n mat misín
 jaguar INST-scare-PF≡JUNCT jaguar APL-tall QTV jaguar
 'The jaguars have frightened people; it's said the jaguars are tall.' [RVA: Cuentos 12]

In (178), the predicate adjective *laki'lha* 'round' agrees with the subject, *i'xlakanká'n misini:'n* 'the jaguar's faces'. The plurality of the subject is also marked on the possessor and the head noun. In (179), the adjective *lakta:lhma:n* 'tall' is also used predicatively. The prefix *lak-* expresses the plurality of the subject, *misín* 'jaguar', which is not itself marked for number, even though it has a plural reading. There are no examples in the database where a pluralized adjective modifies a noun within the noun phrase. However, this may well be an accidental gap in the data since comparative evidence indicates that plural forms of adjectives in this environment modify nouns (Upper Necaxa Totonac: Beck 2000: 235-6, Huehuetla Tepehua: Kung 2007a: 417, Filomeno Mata Totonac: McFarland 2009: 79).

The adjectival plural *lak-* has as an allomorph *laq-* with stems that contain a uvular consonant, such as (180).

(180) *xalaqstala:nqá'n*

xa-**laq**-stala:nqá'-n
 DTV-APL-white-PL
 '(the) white ones.'

¹⁴ The quotative particle *mat* in (178)-(179) is used in discourse episodes in recounting events or stories. The particle *mat* is commonly translated in Spanish as *dicen que* 'they say' or 'it's said' implying that the speaker acquired the information from another source, or does not have first-hand knowledge of the information conveyed by the utterance. The quotative is used quite liberally in some narratives and appears in various positions, usually at the edges of the clause. The term "quotative" is used following Aikhenvald (2004) who describes the quotative as a hearsay or reportative particle or as a second-hand evidential.

The adjectival plural *laq-* exhibits consonant harmony with the uvular stop in the adjectival stem *stala:nqá'n* ‘white’ in (180). The adjective also takes a plural suffix *-n* that appears on nouns (see §4.2). The expression of plurality on adjectives is optional, following the pattern of “general number” marking found with nouns. Singular or bare forms of adjectives frequently appear in contexts where they express a property of a plural entity, as in (181).

- (181) *Se'qét wa'chi' lhkaya:wá'j talaqó:lh xlaká'n.*
 se'qét wa'chi' **lhkaya:wá'j** ta-la-qó:-lh xlaká'n
 grass seems.like **green** 3PL.SUB-be-TOT-PFV PRN.3PL
 ‘Like the pasture, they were totally green.’ [RLP: Chameleon 44]

The adjective *lhkaya:wá'j* ‘green’ in (181) does not take the plural prefix *lak-*, or a plural suffix, even though the subject *xlaká'n* ‘they (the chameleons)’ is plural; the plurality of the subject is also marked on the verb with the prefix *ta-* (3PL.SUB).

3.3.1.2 Determinative

The determinative prefix *xa-* (DTV), discussed in the context of nouns in §4.2.3, also combines with adjectives to signal that of all the possible nominal referents in a particular context, only the one that has the property designated by the adjective is referred to, such as in (182)-(183).

- (182) *A'jyá: xakujpu:lh má:n puská:t kilaqapá'sni'.*
 a'jyá: **xa**-kuj-pu:lh má:n puská:t kin-la'qapásni'
 that **DTV**-head-long woman 1POSS-family.member
 ‘That long-haired woman is my cousin.’

- (183) *...porque wa:q wa:q xalakwán talhpá:n.*
 porque wa:q wa:q **xa**-lakwán talhpá:n
 because all all **DTV**-good.quality rock
 ‘...because all the rocks (were) of good quality.’ [SLO: Cuentos 142]

The *xa*-adjective in (182) expresses the idea that out of all the women, the noun refers to the one who has long hair, and in (183) restricts the set of objects, *talhpá:n* ‘rocks’, to just those that are of good quality.

The determinative prefix also allows adjectives to be used pronominally as anaphoric heads of noun phrases, as in (184).

- (184) *Chi:n kaxlí'jni' i'kla'qa'yi xalaqstala:nqá'n.*
 chi:n kaxlí'-jni' i'k-la'qa'yi-Ø **xa**-laq-stala:nqá'-n
 PTCL chicken-PL 1SG.SUB-like-IMPF **DTV**-APL-white-PL
 'Of the chickens, I prefer the white ones.'

The object of the transitive verb *la'qa'yi* 'A likes X' in (184) is *xalaqstala:nqá'n* meaning something like 'the white (ones)'. The prefix *xa-* allows the adjective to be used anaphorically in reference to an elided noun that has been previously mentioned in the discourse. This use of the *xa-* adjective was also seen in (174) above.

The determinative in ZT is similar to the cognate prefix found in other Totonacan languages. Levy first described the cognate prefix in Papantla as a "specifying determiner" that means something like 'of the X entities, the ones with the properties of Y' (Levy 1992b: 280). Kung and Beck describe this use of the determinative as a type of restrictive modification, which distinguish it from the bare uses of adjectives (Beck 2000: 229, Kung 2007a: 419). In ZT, the determinative on adjectives may signal a specific or definite referent and is obligatory for the adjective to function as an argument of the verb.

3.3.1.3 Deverbalizers on Adjectives

In addition to not showing much inflectional morphology, adjectives do not seem to show much derivational morphology either. Adjectives may be formed with the deverbalizer, which is also discussed within the context of nouns in §4.3.1. The deverbalizer (DVB) suffix *-n(i')* forms adjectives from verb stems, as demonstrated in (185)-(187).

- (185) *chaá:n*
 chaá:-**n**
 be.ripe-DVB
 'ripe'

- (186) *qontí:n*
 qontí:-**n**
 get.fat-DVB
 'fat'

- (187) *másni'*
 mas–**ni'**
 rot–**DVB**
 'rotten'

The deverbalizer is realized as *-n* with vowel-final verb bases, as in (185)-(186), and as *-ni'* with consonant-final verb bases, as in (187). There are not many examples in the database of adjectives derived with the deverbalizer and so it would be interesting to determine what types of verbs combine with the deverbal *-n(V')* to form adjectives; this observation, however, requires further elicitation. The deverbal suffix has cognate reflexes in other Totonacan languages, where it is also used to form adjectives and nouns from verbs (Upper Necaxa Totonac: Beck 2004: 83, Huehuetla Tepehua: Kung 2007a: 408).

3.3.1.4 *Semblative*

The semblative (SEM) suffix *-wa'* derives adjectives from nominal, adverbial, and other adjectival stems. This suffix is semantically similar to what Haspelmath and Buchholz (1998) refer to as the “similative construction” which expresses some degree of similarity of a quality or manner, which in this case, is denoted by the base. The term semblative, however, is used following Beck (2004: 21) for Upper Necaxa Totonac where the suffix that is cognate with *-wa'* in this language functions similarly to the case in ZT. Examples of the semblative suffix attached to nominal bases are shown in (188)-(190).

- (188) *chichí'wa'*
 chichí'–**wa'**
 dog–**SEM**
 'smell of wet dog'

- (189) *la:xáxwa'*
 la:xáx–**wa'**
 orange.fruit–**SEM**
 'orange (color)'

- (190) *kapénwa'*
 kapén–**wa'**
 coffee–**SEM**
 'coffee-colored'

The derived adjectives express a salient physical property of the nominal base, such as smell in (188) and color in (189)-(190).

The semblative (SEM) suffix *-wa'* also forms adjectives from adverbial stems, as seen in (191)-(193). These adverbial stems are comparable to the cognate forms in AT (Reid & Bishop 1974) and UNT (Beck 2011).

(191) *smantájwa'*
smantáj-**wa'**
purple-SEM
'purple, violet'

(192) *sqayanqá'wa'*
sqayanqá'-**wa'**
plain.tasting-SEM
'plain tasting'

(193) *lhtánwa'*
lhtan-**wa'**
pulled.tightly-SEM
'pulled tightly'

In these examples, the semblative *-wa'* derives adjectives from an adverbial base with a similar meaning. The difference between adjectives derived with *-wa'* (SEM) and adverbs with similar meanings is distributional. For example, the derived adjective in (193) can be used as a predicate adjective in non-verbal predicates, e.g. *lhtánwa' i'xtatinút* 'his/her pants (are) tight', while the adverbial form in the same construction was considered ungrammatical **lhtan i'xtatinú:t* Lit. 'His/her pants (are) pulled-tightly.'. The most comprehensive description of the morpho-syntactic differences between adjectives and adverbs in Totonacan is found in Beck (2000, 2013) for UNT.

Adjectives also combine with *-wa'* (SEM) to form new adjectives that express a lesser degree or intensity of the property concept, such as (194)-(195).

(194) *lhkuniwa'*
lhku-ni'-**wa'**
burn-DVB-SEM
'burnt taste or smell'

- (195) *lhmuku'kú:wa'*
 lhmukú'ku–**wa'**
 yellow–SEM
 'yellowish'

In (194), the adjective bearing the semblative expresses the taste or smell of something that is slightly burnt, but not completely charcoaled. In (195), the semblative suffix forms an adjectival stem expressing an intermediate color similar to that of dying leaves; the final vowel of the adjectival base *lhmukú'ku* 'yellow' is lengthened when it combines with *-wa'* (SEM). The semblative suffix *-wa'* has cognate reflexes in other languages in the family, like UNT and FilomenoMata Totonac, where the suffix is referred to as “approximate” but also seems to serve a similar function (McFarland 2009: 101).

3.3.1.5 *Derived Adjectives with Body-part Terms*

Like nouns and verbs, adjectives combine with body-part roots to form more specific adjectives. A variety of body-part roots may combine with the same adjectival base to form a new stem, as in (196)-(199).

- (196) *tu:lhampó'qo'*
tu:–lhampó'qo'
foot–fat/rounded
 'big-footed'

- (197) *pa:lhampó'qo'*
pa:–lhampó'qo'
belly–fat/rounded
 'big-bellied'

- (198) *kinkalhampó'qo'*
kinka–lhampó'qo'
nose–fat/rounded
 'big-nosed'

- (199) *tanlhampó'qo'*
tan–lhampó'qo'
buttocks–fat/rounded
 'big-buttet/bottom'

The bound root forms a more specific adjective in (196) where the property denoted by the adjectival base, *lhampó'qo'* 'fat, rounded', is attributed to the part of the body or object designated by the body-part term.

A number of body-part terms also combine with adjectival bases to form expressions of dimensions or distance in ways that are idiosyncratic and entirely lexicalized, as in (200)-(203).

(200) *a'ktzunáj*
a'k-*tzunáj*
head-little
'small, short'

(201) *qe:tzunáj*
qe:-*tzunáj*
back-little
'thin'

(202) *pi:tzunáj*
pi:-*tzunáj*
chest-little
'narrow'

(203) *lakatzunáj*
laka-*tzunáj*
face-little
'nearby, close'

(200) demonstrates that the derived adjective forms lexicalized terms for dimensions, configurations, or distance. In similar derivations in UNT, the body-part root in these lexicalizations has been described as a "dimensional classifier" because the body-part term takes on a dimensional meaning (e.g. *ak-* 'length (long axis)', *pi-* 'wide area', *he-* 'volume') (Beck 2000: 243).

To summarize this section, adjectives are an open class that express a wide range of property concepts. They are found modifying the noun within the noun phrase or in copula clauses. Adjectives lack in inflectional morphology but can be optionally marked for number with the adjectival plural prefix. One prefix referred to as the determinative allows adjectives to stand alone as the anaphoric head of a noun phrase. This prefix is also found

on nouns as discussed in §4.2.3) and functions to restrict the noun to a definite and particular referent. Furthermore, most adjectives in ZT are underived, although some do show derivational morphology. Adjectives may be formed with the deverbalizer, which is a morpheme that is also found on deverbal nouns (see §4.3.1), and the semblative, which forms adjectives from nouns, adverbs, or other adjectives. Finally, adjectival stems take incorporated body-part terms which form stems that are compositional and highly idiosyncratic and lexicalized.

3.3.2 Adverbs

Adverbs are a large and semantically diverse lexical class of predicate modifiers. ZT adverbs express the usual senses of TIME (204), SPACE (205), and MANNER (206), and most commonly appear in pre-verbal positions.

(204) *Wa:q maqa:stzá' wa'chí' i'xlatla:wán.*

wa:q **maqa:s=tzá'** wa'chí' i'x-latla:wán-Ø
 all **long.ago=now** like.that PST-go.along-IMPF
 'A long time ago, that's how (the witch) used to go along.' [MCC: Witch story 4]

(205) *Kit maqát naká'n.*

kit **maqát** na-i'k-a'n
 PRN.1SG **far** FUT-1SG.SUB-go
 'I will go far away.'

(206) *Lakatzúku' mat tatu:staqo:kánchi'.*

lakatzúku' mat tatu:stá-qo:-kan-chi'
slowly QTV go.up-TOT-IDF-PRX:PFV
 'Little by little, they all began to go up/settle in.' [SLO: Cuentos 119]

ZT adverbs also include what Beck (2008a: 21) calls “configurational” adverbs, which describe orientations and postures, as in (207)-(208), as well as “descriptive” adverbs, which express property concepts (color, shape, age, human propensities, values) that are similar in meaning to adjectives, as in (209)-(211).

(207) *Lakatáj ma:' a'jlá chi'xkú'.*

lakatáj ma:' a'jlá chi'xkú'
face.down lie this.here man
'This man lies face down.'

(208) *To'qó:q wilí:.*

to'qó:q wilí:–Ø
sitting put–IMPF
'S/he places it down sitting.'

(209) *Li:púj li:púj juésa i'kli:sta'kní:t.*

li:púj li:púj juésa i'k–li:–sta'k–ni:t
sad sad obligation 1SG.SUB–INST–grow–PF
'It's sad, it's sad the way I had to grow up.' [RVA: Cuentos 27]

(210) *Xkú'ta' lalh.*

xkú'ta' la–lh
sour.tasting become–PFV
'It became sour.'

(211) *Yo:'qó'qo' wáli xla i'xmákni' sa'qá'qa' wampá.*

yo:'qó'qo' wa–lh=i i'x–la i'x–mákni' sa'qá'qa' wampá
light-skinned say–PFV=JUNCT PST–be 3POSS–body white once.again
'White, he said, his body turned white again.' [RLP: Chameleon 40]

The adverbs in (207)-(211) express a property of one of the participants of the event designated by the verb; unlike adjectives, however, adverbs do not function as syntactic predicates, but are rather strictly predicate modifiers. For example, the adverb *lhtan* 'pulled tightly' is used as a predicate modifier in (212), but was considered ungrammatical in (213), where it appears in what can be a NP or a non-verbal predicate.

(212) *Kintatinút lhtan kinchipá.*

kin–tatinút lhtan kin–chipá
1POSS–pants pulled.tightly 1OBJ–hold
'My pants are pulled-tightly on me.'

(213) **Lhtan i'xtatinú:t.*

'Lit. pulled-tightly, his/her pants'

The most common slot for adverbs is clause or verb initial, as in (204)-(212) above, but adverbs may also appear in post-verbal position, such as in the examples in (214)-(217).

(214) *Pó'qtu' wa'chí' i'xlá laqálh laqálh.*

pó'qtu' wa'chí' i'x-lá **laqálh laqálh**
 always like.that PST-do **daily daily**
 'Like that he always did everyday.' [RLP: Chameleon 4]

(215) *A'ntzá' i'xtama:chiki:ni:ni:'ta:nchá pu:lh pu:lh.*

a'ntzá' i'x-ta-ma:-chiki:-ni:-ni:'ta:n-chá **pu:lh pu:lh**
 over.there PST-3PL.SUB-CS-build-CS-PF-DIST **before before**
 'They had built houses over there, earlier, earlier.' [Story of community 10]

(216) *E:' a'ntzá' xi'kta:'lawí: qa'tla:tús kintzí:'t xwaní:'t.*

e:' a'ntzá' i'x-i'k-ta:'-lawí:-Ø **qa'tla:tús kin-tzí:t**
 and over.there PST-1SG.SUB-CMT-live-IMPF **little.while** 1POSS-mother

i'x-wan-ní:t

PST-be-PF

'And I lived over there for a little while together with my mother when she had been alive.' [SLO: Cuentos: 26]

(217) *Choj cha:'lh tzamá: ta'laná'. Cha:'lín choj mat wan choj.*

choj cha:'n-lh tzamá: ta'laná'
 now arrive-PFV that hunter

cha:'-lh≡in **choj** mat wan-Ø **choj**
 arrive-PFV≡JUNCT **now** QTV say-IMPF **now**

'Now, that hunter came back, and now they say he arrived there.' [SLO 113]

The adverbs that appear post-verbally in (214)-(217) all have temporal meanings. It very well may be a property of temporal adverbs to appear in various positions in the clause; this variation in distribution is also seen with the class of deictic adverbs discussed in §3.3.2.2.

The next subsections further describe two sub-classes of adverbs that are distinguished on morphological and semantic grounds, ideophones and deictic adverbs. Ideophones display unique phonological properties and morphological patterns of reduplication and have a broad range of onomatopoeic and sensory-evoking meanings, as described in §3.3.2.1. Deictic adverbs encode proximal and distal senses from a deictic center and appear in various positions in the clause, as described in §3.3.2.2.

3.3.2.1 Ideophones

Ideophones are a sub-class of adverbs in that they are predicate modifiers. Ideophones are syntactically similar to adverbs, but they can be distinguished on morphological and phonological grounds, following a pattern found in other Totonacan languages (Huehuetla Tepehua: Kung 2005, O'Meara et al. 2019, Filomeno Mata: McFarland 2006, Upper Necaxa Totonac: Beck 2008a). Following Dingemanse (2019: 15), ideophones are "marked words that depict sensory imagery." In ZT, ideophones may be onomatopoeic and sensory-evoking expressions that may show reduplicative phonemic alternations. The placement of stress on ideophones also exhibits some unique prosodic properties, as described in §2.2.2.

Ideophones appear in pre-verbal position like other adverbs, as in the examples in (218)-(220).

(218) *Slam ma'qlípa.*

slam ma'qlíp-a
IDPH lightening-IMPF
'Flash, the lightening strikes.'

(219) *Ponqx tojo:chá nakxká:n sqá'ta' e:' i'xchichí'.*

ponqx tojo:–cha nak=xká:n sqá'ta' e:' i'x–chichí'
IDPH immersed–DIST LOC=water child and 3POSS–dog
'Splash, the child and his dog were immersed in water.' [FAS: Frog story 33]

(220) *We:m ma:tana'pú:lh sqá'ta' jú:ki'.*

we:m ma:–tana'pú:–lh sqá'ta' jú:ki'
IDPH CS–be.at.bottom–PFV child deer
'Wham, the deer made the child fall to the bottom of the hill.' [FAS: Frog story 31]

The ideophones in (218)-(220) have onomatopoeic or sensorial senses, expressing an event that is imitative of a sight, sound, or an entire scene that includes specific types of event participants. *Slam*, for example, describes the sight of the flash of a bolt of lightning in (218), *ponqx* is the sound someone makes when striking water in (219), and *we:m* depicts an entire scene of a person falling from a high place in (220). The ideophonic stems are glossed as "ideophone" (IDPH) since the meanings are usually idiosyncratically expressive of sights, sounds, sensations, or events that require more than a one-word gloss. Some ideophones have sound symbolic properties that are further discussed in (233)-(238) below.

In addition to their semantics, ideophones are also set apart from other adverbs by their unique morphology. Three reduplicative patterns are characteristic of this class. The first involves the full-reduplication (RDUP) of the entire ideophonic root, as in (221)-(223). Full reduplication of the ideophonic root in these examples may form stems with an inherent continuous or iterative meaning.

(221) *lamalama*
lama-**lama**
IDPH-RDUP
'fire burning'

(222) *jilijili*
jili-**jili**
IDPH-RDUP
'horse galloping'

(223) *mulumulu*
mulu-**mulu**
IDPH-RDUP
'water boiling'

The second pattern is the partial-reduplication (PRDUP) of a final -CV syllable, such as (224)-(226). Some partially-reduplicated ideophones have an inherent lexical aspect that is more momentary or instantaneous, or more abundant or occurring with greater intensity.

(224) *lamama*
lama-**ma**
IDPH-PRDUP
'coals glowing in fire'

(225) *jilili*
jili-**li**
IDPH-PRDUP
'horses galloping'

(226) *mululu*
mulu-**lu**
IDPH-PRDUP
'water gushing from ground, container'

A third, less common pattern, exhibits the partial-reduplication of a final -VCV syllable, such as (227)-(228).

(227) *xajaja*
 xaj-**a**ja
 IDPH-**PRDUP**
 ‘water falling from waterfall’

(228) *lunklhulhu*
 lunklh-**ulhu**
 IDPH-**PRDUP**
 ‘person or animal shivering from cold’

The contrastive, fully reduplicative form based on the same root, *xajxaj* ‘raindrops falling’, suggests that the ideophonic root in (227) is *xaj*. The root *lunklh* in (228) is similarly found in the fully reduplicated form *lunkhlunklh* ‘person or animal jumping’.

Patterns of reduplication (full or partial) are semantically contrastive and can add different lexical aspectual senses to the meaning of the stem. Full reduplication (RDUP) expresses the fact that the sound, sensation, or event occurred more than once, as seen in the contrasts in (229)-(230).

<p>(229) <i>kimlh</i> kimlh IDPH ‘person blinks, winks once’</p>	>	<p><i>kimlhkimlh</i> kimlh-kimlh IDPH-RDUP ‘person blinking, winking’</p>
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<p>(230) <i>slam</i> slam IDPH ‘lightening flashes’</p>	>	<p><i>slamslam</i> slam-slam IDPH-RDUP ‘lightening flashes over and over’</p>
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The non-reduplicated ideophones in (229)–(230) and in (218)-(220) above refer to a single occurrence of a scene that happens all at once. The fully reduplicated forms, however, express the fact that the occurrence happened iteratively, over (and over) again. Full reduplication of the ideophonic root has been described as expressing “iteration” or “repetition” in other Totonacan languages as well (Huehuetla Tepehua: Kung 2005, Upper Necaxa Totonac: Beck 2008a).

The partial reduplication of a final -(V)CV syllable is also meaningful, expressing greater intensity or abundance of the sound, sensation, or event, such as the contrasts in (231)-(232).

(231) <i>mulumulu</i> mulu– mulu IDPH– RDUP ‘water boiling.’	>	<i>mululu</i> mulu– lu IDPH– PRDUP ‘water welling up’
(232) <i>jilijili</i> jili– jili IDPH– RDUP ‘horse galloping, thunder’	>	<i>jilili</i> jili– li IDPH– PRDUP ‘horses galloping, thunder roaring’

The fully reduplicated form in (231), *mulumulu*, depicts water bubbling over and over again, while the partially reduplicated form, *mululu* in (231) conveys the image of water welling up and coming out in large continuous bursts. In (232), *jilijili* expresses a scene of a horse galloping, and is also imitative of the sound of thunder, whereas *jilili* involves an abundance of participants (lots of horses galloping), or more intensity (loud thunderous roar). Partially reduplicated ideophones have also been described as expressing greater continuity or duration (Huehuetla Tepehua: Kung 2005, Upper Necaxa Totonac: Beck 2008a) and intensity or abundance (Beck 2008a).

Some ideophones have sound symbolic patterns that have been conventionally associated with certain types of sounds, sensations, or events within the Totonacan literature, particularly, Kung (2005) and Beck (2008a). Five sound symbolic patterns have been proposed in Totonacan identified here in ZT as FLOW, RINGING, POPPING, LIGHT, and RATTLING, and two more, which I propose for ZT as AIR/WIND and CIRCULAR MOTION. Of these seven, the first three have been identified in both Huehuetla Tepehua (HT) in Kung (2005) and Upper Necaxa Totonac (UNT) in Beck (2008a) and the next two (LIGHT, RATTLING) are found in Upper Necaxa. The final two categories, AIR/WIND and CIRCULAR MOTION, are innovative to ZT based on my observations of the data.

The first pattern, FLOW, conveys sounds or scenes involving water in various forms, such as (233).

FLOW: $C_{[bilabial/lateral]}ulu$ or $C_{[bilabial/lateral]}olo$

(233) <i>mulumulu</i>	‘water boiling’
<i>mululu</i>	‘water gushing out of ground or container’
<i>lhululu</i>	‘person slurping a drink’
<i>lhololo</i>	‘water being poured into a container’
<i>tlululu</i>	‘stomach grumbling’

The sound symbolic association with FLOW is a $C_{[bilabial/lateral]}ulu$ or $C_{[bilabial/lateral]}olo$ based stem –that is, a bilabial or lateral consonant + back round vowel + lateral + back round vowel. A similar sound symbolic pattern is found in both UNT and HT.

The second pattern, RINGING, conveys sounds and scenes that are depictive of ringing, tapping, or dripping, such as (234).

RINGING: $t/tlVn/nk$

(234) <i>tonktonk</i>	‘pulse of wrist pumping’
<i>tlantlan</i>	‘church bells ringing’
<i>tlanktlank</i>	‘water dripping’

RINGING in ZT contains a $t/tlVn/nk$ syllable structure –that is, it combines an alveolar stop or affricate + vowel + nasal (+ velar stop). The cognate forms found in (234) correspond to UNT $t/tsVn/n?$, but correspond to a $t/aC_{[liquid]}$ syllable in HT.

The third pattern, POPPING, depicts sounds and scenes that are imitative of popping, striking, or crunching, as in (235).

POPPING: $CVnklh$

(235) <i>lankhlanklh</i>	‘people clapping’
<i>linkhlinklh</i>	‘person or animal walking with a limp’
<i>lunkhlinklh</i>	‘person or animal jumping around’
<i>lonkhlonkh</i>	‘heart beating’
<i>qalankhqalanklh</i>	‘crunching on food’
<i>pankhpankh</i>	‘object falling on floor (glass, eggs)’

POPPING in ZT consists of a $CVnklh$ syllable, which combines a consonant + vowel + nasal + velar stop + lateral fricative. This sound symbolic pattern in UNT corresponds to what is described as “jumping” with a $lVnC$ syllable pattern, and “popping”, which has a $pVCC_{[fricative]}$ pattern. In HT, the sound symbolism for POPPING consists of a $CVlVnC_{[fricative]}$ syllable.

LIGHT is a fourth pattern that conveys scenes of flashing, glowing, or sparkling, as in the examples in (236).

LIGHT: *lam*

(236) <i>lamlam</i>	‘light flashing’
<i>lamalama</i>	‘fire burning’
<i>lamama</i>	‘coals glowing in fire’
<i>slamamslamam</i>	‘glass sparkling’

The ideophones depicting light or flashing in (236) have *lam* in them. This pattern similarly corresponds to an $lVC_{[BILABIAL]}$ pattern in UNT.

The fifth pattern, RATTILING, refers to sounds and scenes that are imitative of rattling, sizzling, and buzzing, as seen in (237).

RATTILING: $C_{[LATERAL]}iC_{[LATERAL/NASAL]}$

(237) <i>tli:’lhtli:’lh</i>	‘rattle rattling’
<i>tlilili</i>	‘sizzling, frying’
<i>lhtinlhtin</i>	‘insect buzzing’
<i>lhtinini</i>	‘static noise (TV)’

The examples in (237) have a $tliC_{[LATERAL]}$ or *lhtin* syllable structure, combining an alveolar-lateral/lateral-alveolar consonant + *i* + lateral/nasal consonant in ZT. This pattern is referred to as RATTILING, BUZZING, CRACKLING in UNT and is expressed by a $tsVC_{[LATERAL]}V$ or $tsVnV$ syllable structure.

The sixth sound symbolic pattern found in ZT are those sounds, actions, or scenes involving AIR or WIND in forms conveying blowing, and breathing, as in (238).

AIR, WIND: $lh(w)V(q/k)$

(238) <i>lheqlheq</i>	‘person or animal panting’
<i>lhonklhonk</i>	‘person snoring’
<i>lhunklhunk</i>	‘person sniffing’
<i>lhu:’klhu:’k</i>	‘strong wind blowing’
<i>lhwa:klhwa:k</i>	‘person chopping with a machete’

The ideophones in (238) corresponds with a $lhV(q/k)$ or $lhwVk$ syllable, which combines a lateral fricative + vowel + velar/uvular stop.

The final pattern depicts a scene that involves motion in a circular or spiral-like manner, as in (239).

CIRCULAR MOTION: *w/pVli*

(239) <i>wiliwili</i>	‘person or object spinning in a circle’
<i>wilili</i>	‘object swirling in circles’
<i>pilili</i>	‘object rolling’
<i>pulili</i>	‘smoke seeping out’

The proposed CIRCULAR MOTION pattern *w/pVli* involves a labial consonant *w/p*, a high vowel *i/u*, plus *-li* sequence.

Table 3 displays the ideophonic adverbs that have been documented for ZT. The ideophones in the table have been categorized roughly into one of the semantic patterns illustrated in (233)-(238): FLOW, RINGING, POPPING, LIGHT, RATTLING AIR/WIND and CIRCULAR MOTION. The table illustrates that while the phonological patterns presented apply to several ideophones with somewhat similar meanings, these patterns do not apply to all the cases which fall within the semantic domain.

Table 3: ZT Ideophones

Ideophone	Semantic domain
FLOW	
<i>lhololo</i>	‘water being poured into a container’
<i>lhululu</i>	‘person slurping a drink’
<i>mululu</i>	‘water gushing out of ground or container’
<i>mulumulu</i>	‘water boiling’
<i>tlululu</i>	‘stomach grumbling’
<i>xajxaj</i>	‘raindrops falling’
<i>xajaja</i>	‘water falling (waterfall)’
RINGING	
<i>tonktonk</i>	‘pulse of wrist pumping’
<i>tlantlan</i>	‘church bells ringing’
<i>tlanktlank</i>	‘water dripping’
<i>tlililintlililin</i>	‘phone ringing’

POPPING

<i>lankhlanklh</i>	‘people clapping’
<i>linkhlinklh</i>	‘person or animal walking with a limp’
<i>lunkhlunklh</i>	‘person or animal jumping around’
<i>lonkhlonkhl</i>	‘heart beating’
<i>pankhlpankhl</i>	‘object falling on floor (glass, eggs)’
<i>qalankhqalanklh</i>	‘crunching on food’
<i>qolhulhu</i>	‘knocking hard on door’
<i>jilijili</i>	‘horse galloping’
<i>jilili</i>	‘lots of horses galloping, thunder roaring’
<i>ka:’paka:’pa</i>	‘clop of horse strutting’
<i>tilhtilh</i>	‘popcorn popping’
<i>telhtelh</i>	‘coins falling on floor’
<i>qolhqolh</i>	‘person walking on high heels, knocking on door’
<i>sqalhsqalh</i>	‘person tiptoeing’

LIGHT

<i>lamlam</i>	‘light flashing’
<i>lamama</i>	‘coals glowing in fire’
<i>lamalama</i>	‘fire burning’
<i>slamamslamam</i>	‘glass sparkling’

RATTLING

<i>lhtinlhtin</i>	‘insect buzzing’
<i>lhtinini</i>	‘static noise (TV)’
<i>tli:’lhtli:’lh</i>	‘rattle rattling’
<i>tlilili</i>	‘sizzling, frying’

AIR/WIND

<i>lheqlheq</i>	‘person or animal panting’
<i>lhonklhonk</i>	‘person snoring’
<i>lhunklhunk</i>	‘person sniffing’
<i>lhu:’klhu:’k</i>	‘strong wind blowing’
<i>lhwa:klhwa:k</i>	‘person chopping with a machete’

<i>lhuwa'ta'lhuwa'ta'</i>	‘person walking with sandals flapping’
<i>tlu'nu'nu'</i>	‘wind blowing’
<i>pulhulhu</i>	‘blowing air out of mouth’
<i>laplhalaptha</i>	‘fish flapping out of water’
CIRCULAR MOTION	
<i>wiliwili</i>	‘person or object spinning in a circle’
<i>wilili</i>	‘object swirling in circles’
<i>pilili</i>	‘object rolling’
<i>pulili</i>	‘smoke seeping out’
Other	
<i>lhuwa'ta'ta'</i>	‘dragging something big and heavy’
<i>wa'ta'ta'</i>	‘dragging something on the floor’
<i>lantata</i>	‘viscous substance oozing out’
<i>lunklhulhu</i>	‘person shivering from the cold’

Not all ideophones in Table 3 show the phonological patterns proposed for a particular semantic class. *Xajxaj* and *xajaja*, for example, have meanings related to water falling and have therefore been placed under the semantic category described as FLOW but these ideophones do not show the phonological pattern described for this semantic class.

The sound symbolic properties of ideophones give rise to conventionalized expressions that are found across the language family, even though we have also seen variation among forms within and across the languages. Kung (2005), for example, who calls this class “affect words” following Kaufman (1988) and England (2004), identifies a sound symbolic pattern of consonant-fronting and vowel-raising that distinguishes diminutive or affectionate ideophonic expressions from augmentative ones characterized by consonant-backing and vowel-lowering. For UNT, Beck (2008a) describes ideophones formed with fricatives and approximants as expressing longer, or continuous events, which contrast with those formed with plosives which express shorter, sharper, or potentially singular events. Vowel and consonant lengthening have been described as corresponding to greater size or longer periodicity as well (Kung 2005, Beck 2008a, McFarland 2010,). While the sound-

symbolic patterns of ideophones in ZT are suggestive of some of these semantic senses, further analysis and documentation would shed more light on these distinctions. The most extensive descriptions of the range of meanings and phonological and morphological patterns of ideophones in Totonacan can be found in Kung (2005) for Huehuetla Tepehua and Beck (2008a) for UNT. More recently, O’Meara et al. (2019) identifies a number of sound symbolic properties related to olfactory terms in Huehuetla Tepehua. These expressions are another area for further research in ZT as well as forming diagnostics for distinguishing ideophonic from non-ideophonic adverbs.

3.3.2.2 *Deictic Adverbs*

Deictic adverbs in ZT are distinguished from regular adverbs on semantic, phonological, and morphological terms. Semantically, deictic adverbs express degrees of spatial or temporal deixis ranging from proximal to distal. Phonologically, they are distinct from other adverbs prosodically. While regular (non-ideophonic) adverbs take the regular stress pattern in elicitation (cf. §2.2.2), multisyllabic deictic adverbs carry ultimate stress in the final light or heavy syllable. These adverbs further take certain morphological forms whose semantic distinctions and functions are difficult to analyze, partly because they are roughly translated into Spanish as *(este) aquí* ‘(this) here’, *(ese) allí* ‘(that) there’, and *(aquel) allá* ‘(that) over there’. These deictic adverbs differ from demonstratives as described in §3.4.2. Table 4 illustrates some of the deictic adverbs that have been documented to date. At this point, it is unclear how this deictic system works and no attempts were made to investigate the distinctions between these forms. The presentation in Table 4 therefore merely follows the analysis of cognate forms for Upper Necaxa Totonac in Beck (2014, 2011a) since the ZT system seems to morphologically follow the UNT system closely, however, further research is needed to decipher if this analysis holds for ZT.

Table 4: ZT Deictic Adverbs

	Proximal	Medial	Distal
	<i>a:'</i>	<i>a'n</i>	<i>a:'j</i>
Demonstrative	<i>a:'tzá:'</i>	<i>a'ntzá'</i>	<i>a:'jtzá'</i>
	<i>a'nanú:'</i>	<i>a'nú:'</i>	<i>a'jnanú:'</i>
	<i>wa:'</i>	<i>wa'n</i>	<i>wa:'j</i>
Non-demonstrative	<i>wa:tzá:'</i>	-	-
	-	-	<i>wa:'jnanú:'</i>
Specific	<i>tza'</i>		

The system in Table 4 combines at least, morphologically, three degrees of deixis (proximal, medial, and distal) with what Beck (2011b: 54) describes as a demonstrative and non-demonstrative distinction – the difference being whether the location is being pointed to (demonstrative) or the location is being referred to contrastively (non-demonstrative). An additional element *tza'* labelled ‘specific’ in Beck (2011b) is described as indicating a prior discourse participant or shared knowledge. Non-demonstrative forms are morphologically distinguished from demonstratives marked with *w-* (Beck 2014: 24). While these morphological similarities are typologically and diachronically interesting, the semantic differences and uses of these adverbs have not been analyzed in ZT.

Some observations based on the data are that deictic adverbs can appear in various positions and are commonly found at the edges of the clause. Like other adverbs, deictic adverbs tend to appear in preverbal position, as in (240)-(242), where they express various senses of spatial location.

(240) *Tza' mimá:'*.

tza' min–ma:'
over.here come–PROG
‘S/he is coming over here.’

(241) *A:'tzá:' kalhtatít*.

a:'tzá:' ka–lhtatá–tit
here OPT–sleep–2PL.SUB
‘You all sleep here!’ [RVA: Cuentos 25]

(242) *Ti: a'nú:' ka:wá lakstín xka:laqmaqe:'qlhamá:'*
 ti: **a'nú:'** ka:–wa lakstín i'x–ka:–laq–maqe:'qlhá–ma:'
 HREL **over.there** PL.OBJ–eat:IMPF children PST–PL.OBJ–INTNS–scare–PROG
 'The one over there who eats the children used to go scaring them.'
 [MCC_ Witch story_2]

Deictic elements also commonly appear in clause-final position and may also express temporal deixis, as seen in (243)-(244).

(243) *Lhu:wánka' wa:tzá:' a'ntzá' lha: wili:ka' i'xtakwi:ní't Zihuateutla.*
 lhu:wán–ka' **wa:tzá:'** **a'ntzá'** lha: wili:–ka'
 populate–IDF:PFV **here** **over.there** when put–IDF:PFV

 i'x–takwini:t Zihuateutla
 3POSS–name Zihuateutla
 'It was populated here, over there, when they_{IDF} gave it the name of Zihuateutla.'
 [Community: 39]

(244) *Ma'qtín ka:'taxkamani:n tastá'kli' a'jtzá' a'na:nú'.*
 ma'q–tín ka:'–ta–xkamani:n ta–stá'k–li' **a'jtzá'** **a'na:nú'**
 NUM.CLF–one PLC–INCH–orphan 3PL.SUB–grow–PFV **here** **over.there**
 'At that time, they grew up in poverty.' [MCC: Story of past 5]

The deictic adverbs in (243)-(244) may be used with spatial and temporal senses, where temporal uses may emphasize the time of the event occurrence denoted by the predicate.

Deictic adverbs can be quite widespread in narratives and ZT seems to have a fairly large system of deictic adverbs. Some Totonacan languages, however, have been described as having a small set of these adverbs (Misantla Totonac: MacKay 1999, Huehuetla Tepehua: Kung 2007a, Filomeno Mata Totonac: McFarland 2009), while others have a larger set (Upper Necaxa Totonac: Beck 2011a). The most comprehensive description of deictic adverbs for Totonacan is found for Upper Necaxa Totonac (Beck 2004, 2011a, 2014). The system of deictic adverbs in ZT requires further study and a deeper observation on how they are used in discourse contexts. One way the system could be investigated is by presenting speakers with various landmarks (spatial and temporal) in order to elicit which deictic adverbs are used for the various spatial locations or temporal sequences.

To summarize §3.3.2, adverbs form a large lexical class of predicate modifiers. Adverbs are rather semantically diverse expressing time, space, manner, configuration, and property

concepts. These predicate modifiers typically appear in pre-verbal position, although some, particularly those adverbs with temporal meanings can be found in various positions in the clause. Furthermore, two sub-classes of adverbs — ideophones and deictic adverbs — are formally distinguished by their phonological, morphological, and semantic properties. Ideophones express onomatopoeic or synesthetic senses and have contrastive reduplicative patterns that signal lexical aspectual meanings, such as iteration, intensity, or abundance. Some ideophones have sound-symbolic patterns (specific consonant and vowel combinations) that have been conventionally associated with certain types of meanings or events. Seven language-particular patterns have been identified in ZT, described as FLOW, RINGING, POPPING, LIGHT, RATTLING, AIR/WIND, and CIRCULAR MOTION. The other subclass, deictic adverbs, express varying degrees of spatial and temporal deixis from proximal to distal. Phonologically, stress on multisyllabic deictic adverbs always falls on the ultimate (light or heavy) syllable. Unlike most adverbs that appear predicate initially, deictic adverbs are widespread and surface in various positions in the clause.

3.3.3 Body-part Terms

This section describes a sub-class of nouns that refer to parts of the body or parts of other objects. This lexical subclass, referred to as body-part terms or BPTs, is formally distinguished from regular nouns by their semantic, combinatorial, and functional properties. Semantically, the formal class of body-part terms expresses parts of a whole with meanings related to anatomy that are extended to refer to parts of other objects and have figurative and idiomatic senses. Morphologically, this lexical subclass has independent and dependent forms. In their independent forms, BPTs are inherently possessed and can be used as an argument of the verb. In their dependent forms, they are used derivationally with verbs, adjectives, and other nouns to form new lexical stems that have literal, figurative, or idiomatic senses. BPTs in independent and dependent forms are also used in expressions of spatial location, denoting one object in relation to another. This section defines the subclass of nouns referred to as “body-part terms”, briefly illustrating their morphological and combinatorial potential and some of their functions including their uses in denoting spatial relations.

One of the features that distinguish the subclass of body-part terms from other nouns is that they have both independent and dependent forms. In their independent forms, they are inherently possessed nouns, that is, they always appear inflected for the person of possessor. Independent forms of body-part terms are created by a bound body-part root and a paronymic suffix *-n(i')*, which has two allomorphs, as in (245)-(246).

(245) *Ka'tzán kimakán.*

ka'tzán-Ø	kin-maka- n
feel.pain-IMPF	1POSS-hand-PRT
'My hand hurts.'	

(246) *Ka'tzán kimpíxni'.*

ka'tzán-Ø	kin-pix- ni'
feel.pain-IMPF	1POSS-neck-PRT
'My neck hurts.'	

Vowel-final roots, like *maka-* 'hand' in (245) take the suffix *-n*, whereas consonant-final roots, like *pix-* 'neck' in (246) combine with the suffix *-ni'*. The body-part terms, when used as a syntactically independent noun, are inflected with the person of possessor as seen in (245)-(246) with the prefix *kin-* (1POSS). The verb *ka'tzán* 'X causes pain to X's possessor' takes the body-part noun as an argument of the verb.

In their dependent form, body-part roots do not take the paronymic suffix *-n(i')* and are used derivationally by incorporating into verbs, nouns, and adjectives. BPTs, for example, can be incorporated into verbs to derive new verb stems, as shown in (247)-(248).

(247) *I'kmakaka'tzán.*

i'k- maka -ka'tzán
1SG.SUB- hand -feel.pain
Lit. 'I hand-hurt.'
'I feel pain on my hand.'

(248) *I'kpixka'tzán.*

i'k- pix -ka'tzán
1SG.SUB- neck -feel.pain
Lit. 'I neck-hurt.'
'I feel pain on my neck.'

The bound root, *maka-* 'hand' in (247) and *pix-* 'neck' in (248) incorporates into the verb *ka'tzán* 'X causes pain to X's possessor' to form a new stem, meaning 'X feels pain in X's

hand/neck’. The event-participant, the PATIENT or UNDERGOER, whose part is affected is the syntactic subject expressed by the subject agreement prefix *i’k-* (1SG.SUB). and the BP root expresses the specific location of where the sensation denoted by the verb occurs.

In addition to their literal uses, body-part terms have figurative senses that have semantic extensions to denote the parts of other objects. Semantic extensions of BPTs to parts of objects are mostly based on shape and sometimes the function of its anatomical denotation, as in (249)-(251).

(249) *i’xa’qán kí’wi’*
i’x-a’qa-n *kí’wi’*
 3POSS-**ear**-PRT tree
 Lit. ‘its ear, (the) tree’
 ‘the branch of the tree’

(250) *xtáni’ pu:tláuj*
i’x-tan-ni’ *pu:tláuj*
 3POSS-**buttocks**-PRT car
 Lit. ‘its buttocks, (the) car’
 ‘the back bumper of the car’

(251) *xmakán salún*
i’x-maka-n *salún*
 3POSS-**hand**-PRT hoe
 Lit. ‘its hand, (the) hoe’
 ‘the handle of the hoe’

These BPTs are semantically extended to denote a part of an object that has a similar shape, configuration, or function to the etymological body-part origin. In (249), *i’xa’qán* ‘her/his/its ear’ is used in constructions to refer to the part of an object that protrudes from a base, like the branch of a tree. The noun *i’xtáni’* ‘her/his/its buttocks’ is used to refer to the bottom of an object where it “sits” or the back end of an entity, like the back bumper of the car in (250). The body-part noun *i’xmakán* ‘its hand’ denotes the long round stick of the hoe based on the function it serves as the part of the object used to maneuver it in (251).

Body-part terms are also semantically extended from their literal uses to expressing topological relations (Frawley 1992: 250). Topological relations are relational concepts involving what Talmy (1978, 2000) refers to as the expression of a FIGURE and GROUND object. The FIGURE represents the moveable or variable entity in a scene that can be located

in relation to a reference object called the GROUND. In these locative predicates, the BPT incorporates into a stative posture verb and expresses the precise location of a FIGURE in relation to the GROUND, as seen in (252).

(252) *Naksipéj a'kpu:yá: pu:laktín kí'wi'.*

nak=sipéj	a'kpu:-ya:	pu:lak-tin	kí'wi'
LOC=mountain	head.crown-stand	NUM.CLF-one	tree

‘The tree is on top of the mountain.’ [MCC: TRPS #63]

The body-part root *a'kpu:-* ‘crown of the head’ incorporates with the stative posture verb *ya:* ‘stand’ to locate the tree (FIGURE) in relation to the mountain (GROUND) in (252). The stative posture verb *ya:* ‘stand’ expresses the idea that a vertical entity, the tree, is located in a place. The body-part term functions to locate the FIGURE, *kí'wi'* ‘tree’, in relation to the GROUND, *sipéj* ‘mountain’, by referring to the top or highest point of the mountain that is considered its metaphorical crown.

BPTs also have semantic extensions that express projective locative relations (Frawley 1992: 262) where the relation between the FIGURE and GROUND depends on the perspective of the viewer or speaker. The BPT, for example, expresses the fact that the FIGURE is above or over the GROUND, as seen in (253), where the body-part noun forms a locative complement to the stative posture verb.

(253) *Xa'kpú:n sipéj wi: laqatín po'qlhnú'.*

i'x-a'kpú:-n	sipéj	wi:	laqa-tin	po'qlhnú'
3POSS-head.crown-PRT	mountain	sit	NUM.CLF-one	cloud

‘The cloud is over the mountain.’ [FAS: TRPS #36]

In (253), the anatomical noun *i'xa'kpú:n* ‘its crown of the head’ is used to locate the *po'qlhnú'* ‘cloud,’ which is hovering above the *sipéj* ‘mountain’. The body-part term is extended from referring to the topmost part of the mountain in (252) to the projected non-contiguous area above the mountain in (253). The body-part term is used relationally to locate the FIGURE and GROUND in combination with the existential use of the stative posture verb *wi:* ‘sit’, which seems to be the default posture verb for entities that do not have a clear configuration.

There are over 100 body-part terms in the database that are semantically related to the domain of the body with literal and figurative senses. Table 5 displays examples of the

lexical subclass that refer to parts of the body that are semantically extended to refer to parts of inanimate entities (e.g. *aqán* ‘ear’ > ‘branch’). The table also illustrates the body-part terms that are semantically extended from their literal denotation to expressing non-contiguous and projective spatial relations (e.g. *ta:pá:n* ‘side of body’ > ‘next to, besides’; *a'kpún* ‘crown of head’ > ‘on top’ > ‘above’). Many body-part terms have a number of idiomatic uses, in that the term no longer refers to the literal part of the body or one of its typical denotations. In addition, a few BPTs are exceptional in that they do not have an independent form created with *-n(i')*. These body-part terms do not have a nominal counterpart, and only appear in dependent forms (e.g. *a'k-* ~ *a'q-* ‘head’). These bound morphemes derive new verbal, nominal, or adjectival stems like other body-part terms in literal, figurative, and idiomatic expressions. It is important to note that not all terms that refer to parts of the body fall into this special lexical sub-class, but rather only those body-part terms that have these unique functional and combinatorial properties as presented in Table 5. Table 5 exhibits some of these stems without the possessive inflection, followed by their bound forms, and some of their possible denotations.

Table 5: ZT Body-part terms in independent and combining forms with literal and extended senses

Independent form	Combining form	Literal gloss	Figurative gloss
<i>a'kpú:n</i>	<i>a'kpu:-</i>	‘crown of head’	‘top’ (e.g. of a table, mountain, ceiling), ‘above’
-	<i>a'q- ~ a'k-</i>	‘head’	‘top’, ‘top end’
<i>a'kpá:n</i>	<i>a'kpa:-</i>	‘edge’	‘top edge’ (e.g. one’s eyelids)
<i>a'qán</i>	<i>a'qa-</i>	‘ear’	‘protrusion from a base’ (e.g. branch, handle)
<i>cha:'n</i>	<i>cha:'-</i>	‘shin’	‘long and cylindrical’ (e.g. trunk of a tree, leg of a table), ‘center’
<i>kilhni'</i>	<i>kilh- ~ qalh- ~ qalha-</i>	‘mouth’	‘edges’ (e.g. rim of cup, blade of knife), ‘openings’ (e.g. of a sack)
<i>kilhtú:n</i>	<i>kilhtu:-</i>	‘edge’	‘edge’ (e.g. of a pot, table, or river)

<i>kíni'</i>	<i>kinka-</i> ~ <i>qenqa-</i>	‘nose’	‘point, tip’ (e.g. of a pencil, stick, airplane)
-	<i>kuk-</i> ~ <i>qoq-</i>	‘head’	‘pointed end’, ‘top’
<i>lakán</i>	<i>laka-</i> ~ <i>laqa-</i>	‘face’	‘flat planar vertical surface’ (e.g. palm of hand, sole of foot), ‘front’ (e.g. of house)
<i>makán</i>	<i>maka-</i> ~ <i>maqa-</i>	‘hand’	‘branch’, ‘handle’
<i>mákni'</i>	<i>mak-</i>	‘body’	‘bulky part’ (e.g. of a pot, basket)
<i>pa:n</i>	<i>pa:-</i>	‘belly’	‘middle part’, ‘center’
<i>peqén</i>	<i>peqe-</i>	‘arm’	‘wing’, ‘branch’
<i>píxni'</i>	<i>pix-</i>	‘neck’	‘long, cylindrical’
<i>pi:n</i>	<i>pi:-</i>	‘chest’	‘flat thick extension’
<i>pu:n</i>	<i>pu:-</i>	‘vagina’	‘containers’, ‘interior’, ‘center’
<i>pu:lákni'</i>	<i>pu:lak-</i> ~ <i>pu:la'q-</i>	‘stomach’	‘center’, ‘interior’
<i>pu:chaqá:n</i>	<i>pu:chaqa:-</i>	‘interior’	‘interior’ (e.g. of a car, pot, avocado, basket)
<i>qe:n</i>	<i>qe:-</i>	‘back’	‘top surface’ (e.g. roof), ‘backside’ (e.g. house)
<i>qe:stí:n</i>	<i>qe:sti:-</i>	‘backbone’	‘machete’s edge’, ‘top ridge’, ‘dorsal fin’
<i>tantú:n</i>	<i>tantu:-</i>	‘foot, leg’	‘long thick’, ‘post’ (e.g. of a house)
<i>tampá:n</i>	<i>tampa:-</i>	‘stomach, abdomen’	‘bottom edge’, ‘surface’
<i>tampí:n</i>	<i>tampi:-</i>	‘base’	‘base’, ‘lower part’, ‘underside’
<i>tampú:n</i>	<i>tampu:-</i>	‘bottom interior’	‘bottom inside of an object’
<i>tampúsni'</i>	<i>tampus-</i>	‘bellybutton’	-
<i>táni'</i>	<i>tan-</i>	‘buttocks’	‘backside’, ‘bottom of object’
<i>ta:pá:n</i>	<i>ta:pa:-</i>	‘side of body’	‘side of object’, ‘next to’, ‘beside’,
<i>tojón</i>	<i>tu:-</i>	‘toe, foot’	‘base of object’

Some body-part roots in Table 5 have phonological allomorphs that are lexically-conditioned to appear with certain stems. Some of these allomorphs are chosen based on consonant harmony with the root, such as *makaxaká* ‘s/he cleans her hands’ and *maqacha'qán* ‘s/he washes her hands’. Some allomorphs are conditioned by vowel

lowering in the context of uvular consonants, such as the foot-related prefix *tantu:-* which surfaces as *tanto:-* before /q/, e.g. *tanto:qó'xqa'* 'skin of the foot'. Other body-part roots seem to have more unpredictable or suppletive forms, such as *kilh-* 'mouth', which has as allomorphs the mouth-related forms, *kilh-*, *qalh-*, and *qalha-* '(inner) mouth'.

The semantic extension of these terms from part of the body to part of an object is discussed in terms of forming predicates expressing locative relations between FIGURE and GROUND in the next section, which illustrates some of the uses of body-part terms in noun phrases and verb stems in expressions of spatial relations. BPTs are further discussed within the context of lexicalizing terms for more specific body parts in §4.3.4. BPTs on adjectival stems were illustrated in §3.3.1.5, and BPTs incorporated into stative verbs are further discussed in §5.3 and in dynamic and stative verb stems in §6.1.5.

3.3.3.1 *Body-part Terms in Locative Expressions*

ZT lacks a formal class of adpositions and instead makes use of body-part terms to express the spatial location of one object in relation to another. BPTs in independent and dependent forms express topological and projective spatial relations in the sense of Frawley (1992) in combination with stative posture verbs and dynamic verbs. In their independent forms, BPTs take possessive inflection and function as a locative complement or adjunct when appearing with the proclitic *nak=* (LOC). These locative relations are also formed with BP roots incorporated into stative posture verbs to signal where an entity is located. BPTs also combine with dynamic or motion verbs to signal the DIRECTION, SOURCE, or GOAL location of the moveable entity. Most of the data and the images presented in this section were obtained using the *Topological Relations Picture Series* (TRPS) developed by Bowerman & Pederson (1992), which consists of 71 pictures that depict spatial relations between a FIGURE and GROUND element in a scene.

Body-part terms used in locative expressions can be analyzed as expressing spatial relations between FIGURE and GROUND configurations (Talmy 1978, 2000:184). The FIGURE is the variable, moveable entity in the scene and the GROUND is the reference object or point with respect to which the FIGURE can be located. Body-part terms that are used as relational or possessed nouns express topological spatial relations of one object, the FIGURE, in comparison to another, the GROUND, as seen in (254)-(256).

- (254) *I'xa'kpú:n mé:sa wi: tasáj.*
 i'x-**akpú:n** mé:sa wi: tasáj
 3POSS-**head.crown** table sit cup
 'The cup is on top of the table.' [MCC: TRPS #1]



- (255) *I'xta:pá:n sipéj ya: kí'wi'.*
 i'x-**ta:pá:n** sipéj ya: kí'wi'
 3POSS-**side.of.body** mountain stand tree
 'The tree is on the side of the mountain.' [FAS: TRPS #17]



- (256) *Cha:'tín chi'xkú' wa'ká' xqé:n laqatín chik.*
 cha:'-tín chi'xkú' wa'ká'
 NUM.CLF-one man be.high.up



- i'x-**qe:n** laqa-tín chik
 3POSS-**back** NUM.CLF-one house
 'The man is on the roof of the house.' [RLP: TRPS #34]

The noun *i'xa'kpú:n* 'its crown' in (254) denotes the highest or top-most region of the table (the GROUND) where the cup (the FIGURE) is located. The stative posture verb, *wi:* 'X sits', forms an existential predicate and is the default posture verb for objects that do not have a clear orientation or configuration (cf. §5.3.2). In (255), the stative posture verb *ya:* 'X stands' expresses the vertical configuration of the tree (FIGURE), while the noun *i'xta:pá:n* 'its side (of body)' refers to the side of the mountain (GROUND) on which the tree is located. The noun, *i'xqé:n* 'its back', in (256) denotes the 'top region' or 'roof' of the house (GROUND) to locate the man (FIGURE). The posture verb, *wa'ká'* 'X is high up', expresses the position of the FIGURE.

The locative body-part noun can also be introduced by the proclitic *nak=*, as in (257)-(259).

- (257) *Kí'wi' ya: nai'xa'kpú:n sipéj.*
 kí'wi' ya: **nak=i'x-a'kpú:n** sipéj
 tree stand **LOC=3POSS-head.crown** mountain
 'The tree is on top of the mountain.' [FAS: TRPS #65]



- (258) *Nai'xmaqán xakí'wi' wa'ká' laxáx.*
nak=i'x-maqán xa-kí'wi' wa'ká' laxáx
LOC=3POSS-hand DTV-tree be.high.up orange
 'The orange hangs on the branch of the tree.' [FAS: TRPS #27]



(259) *Nai'xkíni' kí'wi' wa'ká' ponqós.*

nak=i'x-kíni' kí'wi' wa'ká' ponqós
LOC=3POSS-nose stick be.high.up balloon

'The balloon hangs on the tip of the stick.' [FAS: TRPS # 20]



The proclitic *nak=* (LOC) is a general locative morpheme that can have a wide range of adpositional meanings. The locative particle introduces the relational noun phrases in (257)-(259) while the BPTs specify the precise location of the FIGURE-GROUND relation. The noun *i'xa'kpú:n* 'its crown' refers to the highest part of the mountain (GROUND) and is used to locate the tree (FIGURE) in (257). The noun phrase with *i'xmaqán* 'its hand' refers to the part of the tree that protrudes, namely its branch, to locate the orange in (258).¹⁵ The noun *i'xkíni'* 'its nose' denotes the end of the stick (GROUND) to locate the balloon (FIGURE) in (259). However, as shown above in (254)-(256), *nak=* (LOC) is not necessary for the expression.

While the locative predicates in (254)-(259) all involve relations that involve direct contact between FIGURE and GROUND, body-part terms in locative constructions may also express topological spatial relations where the region of reference expands from a contiguous part of a GROUND to a region that is not part of, or in direct contact with the GROUND, as in (260)-(262) (see Table 5).

(260) *Xa'kpú:n sipéj wi: laqatín po'qlhnú'.*

i'x-a'kpú:n sipéj wi: laqa-tín po'qlhnú'
3POSS-head.crown mountain sit NUM.CLF-one cloud

'The cloud is over the mountain.' [FAS: TRPS #36]



(261) *I'xtampí:n mé:sa wi: mí:stu'.*

i'x-tampí:n mé:sa wi: mí:stu'
3POSS-underside table sit cat

'The cat is under the table.' [MCC: TRPS #31]



(262) *I'xpa:xtú:n makskút wi: qawá'chu'.*

i'x-pa:xtú:n makskút wi: qawá'chu'
3POSS-side/border fire sit boy

'The boy is beside the fire.' [FAS: TRPS #37]



¹⁵ Two different speakers made reference to the tree's branch as 'its hand' in ZT, which is quite unusual as branches are more commonly referred to as *i'xpeqén* 'its arm' or *i'xa'qán* 'its ear.'

In (260)-(262), the locative noun phrase denotes a region that is adjacent to the GROUND to locate the FIGURE. The possessed noun *i'xa'kpú:n* ‘its crown’ projects a region from the top of the mountain to the area ‘above’ or ‘over’ to locate the cloud in (260). In (261), *i'xtampí:n* selects a part of the table ‘its underside’ that is projected to a region ‘under, below’ to indicate where the cat is sitting — its position expressed by the posture verb, *wi:* ‘sit’. In (262), *i'xpa:xtú:n* ‘its border, side’ signals a region of the fire inducing the meaning ‘next to, beside’ to locate the boy.

In addition to forming locative predicates in relational noun constructions, BPTs in dependent forms incorporate with stative posture verbs to serve similar functions. Incorporated body-part roots, for example, may be used literally to express the sub-part of the GROUND where the FIGURE is located, as in (263)-(264).

(263) *Chi'xkú' kilhyá: i'xu:'xkú:'t.*

chi'xkú'	kilh-ya:	i'x-u:'xkú:'t
man	mouth-stand	3POSS-tobacco

‘The man has a cigarette in his mouth.’ [FAS: TRPS #39]



(264) *Ta:pa:wí: i'xtapatulát puskát.*

ta:pa:-wi:	i'x-ta:pa:tulát	puskát
side-sit	3POSS-belt	woman

‘The woman is wearing a belt.’ [FAS: TRPS #42]



In (263), the posture verb *ya:* ‘X stands’ is made transitive with *kilh-* ‘mouth’, deriving the verb *kilhyá:* ‘X stands on Y’s mouth,’ where the FIGURE’s location, the cigarette, is designated by the body-part root. In (264), *ta:pa-* ‘side of the body’ combines with the stative posture verb *wi:* ‘X sits’ to form a transitive verb *ta:pa:wí:* ‘X sits on Y’s side’.

The body-part terms in these constructions are also figuratively extended to express the sub-part of the GROUND where the FIGURE is located, as in (265)-(267).

(265) *Kilhwa'ká' li:chu'kún li:wát.*

kilh-wa'ká'	li:-chu'kú-n	li:-wát
mouth-be.high.up	INST-cut-DVB	INST-food

‘The food is on the knife’s blade.’ [FAS: TRPS #12]



(266) *Místu' pu:wí: tilhmáj.*

místu' **pu:–wí:** tilhmáj
 cat **vagina–sit** blanket

‘The cat sits on the blanket.’ [FAS: TRPS #40]



(267) *Qantín kanteláj cha:'wí: xacha:'tawilát.*

qan–tin kanteláj **cha:'–wí:** xa–cha:'tawilát
 NUM.CLF–one candle **shin–sit** DTV–ribbon

‘The ribbon is on the candle.’ [MCC: TRPS #04]



The stative posture verb *wa'ká'* ‘X is high up’ combines with *kilh-* ‘mouth’ in (265) which is used to lexicalize the blade or edge of the GROUND, the knife. The derivation forms a transitive predicate ‘X is on Y’s mouth or blade’, which takes two overt nominal arguments, the subject *li:wát* ‘food’ and the object *li:chu'kún* ‘knife’. The root *pu:-* ‘vagina, interior’ in (266) is used to denote the middle part of the blanket, or GROUND, and combines with the posture verb *wi:* ‘X sits’ to derive a transitive verb, *pu:wí:* ‘X sits in Y’s center.’ The FIGURE and GROUND are denoted by the subject and object noun phrases, *místu'* ‘cat’ and *tilhmáj* ‘blanket’. The stative posture verb *wi:* ‘X sits’ is normally monovalent and intransitive, but in the example in (267) the posture verb combines with the BP root *cha:'-* ‘shin’ to form a transitive verb, *cha:'wí:* ‘X sits on Y’s shin’. The derived verb has two overt nominal arguments, *kanteláj* ‘candle’ and *xacha:'tawilát* ‘lit. the thing that sits on its shin’.

There is also a class of transitive wearing verbs that are formed by combining a body-part root with a bound locative root, as in (268)-(269).

(268) *Cha:'tín chi'xkú' qoqnú: laqatín táqnu'.*

cha:'–tín chi'xkú' **qoq–nu:** laqa–tín táqnu'
 NUM.CLF–one man **head–on** NUM.CLF–one hat

‘The man is wearing a hat.’ [MCC: TRPS #05]



(269) *Cha:'tín puská:t pixnú: laqatín tapixnu'.*

cha:'–tín puská:t **pix–nu:** laqa–tín ta–pixnu'
 NUM.CLF–one woman **neck–on** NUM.CLF–one INCH–neck.in:DVB

‘A woman wears a necklace.’ [RLP: TRPS #51]



In (268)-(269), *qoq-* ‘head’ and *pix-* ‘neck,’ combine with the locative base *-nu:* ‘on’ to form a transitive verb meaning ‘X is on Y’s body part’. In UNT, these roots also combine with the stative base *-xtu* ‘out’ to form a class of undressing verbs, although there are no

examples in the ZT database of these.

While the previous illustrate body-part terms used as part of the expression of static location involving stative verbs, locative phrases formed with body-part nouns are also found with motion verbs. In these expressions, the body-part root denotes a part of the GROUND object to locate the GOAL (270) or SOURCE (271) of the event expressed by the verb.

(270) *Maqe:'qlháli' sqá'ta'. Tukálh xa'kpú:n talhpán.*

maqe:'qlhá-li' sqá'ta' tuká-lh i'x-a'kpú:n talhpán
 frighten-PFV child go.up-PFV 3POSS-head.crown boulder
 '(The owl) scared the boy; he climbed up the rock.' [FAS: Frog Story 26]



(271) *Xiwá:n minchá xqe:n chi'k.*

xiwá:n min-cha i'x-qe:n chi'k
 Juan come-DIST:PFV 3POSS-back house
 'Juan fell from the roof of the house.'

In (270), the dynamic verb *tuká* 'A goes up' expresses the direction of motion of the boy (FIGURE). The possessed noun *i'xa'kpú:n* 'its crown' denotes the part of the GROUND, *talhpán* 'boulder,' that is the GOAL or end point location of the FIGURE in the motion event. In (271), the dynamic verb *min* 'X comes' expresses motion originating on the roof of the house, expressed by *i'xqé:n* 'its back,' which expresses the region of the house (GROUND) where Juan (FIGURE) is located at the beginning of the motion event.

In summary, this section has described a formally distinguished sub-class of nouns, called body-part terms, which are a well-established lexical sub-class in the Totonacan languages. Body-part terms are distinguished from other nouns by having both independent and dependent forms. Independent forms of body-part terms are inherently possessed nouns that may function as an argument of the verb or can be used as relational noun phrases in the formation of spatial or locative predicates. Dependent forms of body-part terms incorporate with stative posture verbs to serve similar relational or locative functions. Since ZT lacks a formal class of adpositions, the sub-class of body-part terms, as possessed nouns or incorporated into stative posture verbs, are used similarly to how adpositions function. In terms of their semantics, this lexical sub-class refers to parts of the body or objects, which have given rise to a number of extended and often highly figurative senses which are further discussed in §6.1.5. BPTs may further combine with each other to lexicalize

terms for more specific parts and they combine with other nouns (see §4.3.4), verbs (see §6.1.5), adjectives (see §3.3.1.5) and numerals (see §3.4.3) in ways that are compositional, figurative, and idiosyncratic.

3.4 Grammatical Word Classes

This section describes a number of grammatical subclasses in ZT. The section presents pronouns, personal and possessive, which show no case or gender distinction and are marked for person and number (see §3.4.1). Demonstratives express degrees of spatial deixis and introduce noun phrases or may be used pronominally as anaphors (see §3.4.2). Numerals in ZT are formed from a bound numeral root prefixed with one of 35 classifiers, which is a fairly large system for the Totonacan languages (see §3.4.3). Most numeral classifier prefixes have been grammaticalized from the subclass of nouns referred to as body-part terms, which were introduced in §3.3.3. Negative clauses are formed with a negative particle in pre-clausal position, similar to the position of adverbs, demonstrated in §3.4.4. Polar questions are marked with a rise in intonation, while other interrogative structures are formed with an interrogative pronoun and an interrogative particle on the left-most edge of the clause (see §3.4.5); these pronominal particles are further heterosemous with a set of subordinators described in §3.5.

3.4.1 Pronouns

Pronouns, personal and possessive, function as a substitute for nouns or noun phrases. These pronouns make no distinctions for case, animacy, or gender, but make distinctions for person — first, second, and third — and number — singular and plural. Additionally, pronouns do not make an inclusive/exclusive distinction in the first person. Two subtypes of pronouns are presented in this section, personal and possessive.

The personal pronouns in ZT are found in Table 6.

Table 6: ZT Personal Pronouns

Person	Singular	English gloss	Plural	English gloss
1	<i>kit</i>	‘I, me’	<i>kinán</i>	‘we, us’
2	<i>wi'x</i>	‘you’	<i>wi'xinán</i>	‘you all’
3	<i>xla / u:'tzá'</i>	‘s/he, it, him, her’	<i>xlaká'n / u:'tunún</i>	‘they, them’

Table 6 shows that the third-person pronouns have two variants for singular, *xla* and *u:'tzá'* ‘s/he, it’ and plural, *xlaká'n* and *u:'tunún* ‘they’.

Personal pronouns have the same syntactic distribution as ordinary nouns. The pronoun *u:'tzá'* refers to an inanimate entity in (272) and a human or animate entity in (273).

(272) *U:'tzá'n tu:n ka:xwili:ní:'ti wa:má i'xká:n sipéj.*

u:'tzá'≡n tu:≡n ka:'x-wilí:-ní:'t≡i
PRN.3SG≡JUNCT NREL≡JUNCT prepared-put-PF≡JUNCT

wa:má: i'x-xka:n sipéj
 this 3POSS-water mountain

‘It (this story) is what formed the water on this mountain.’ [SLO: Cuentos 2]

(273) *U:'tzá' ka:maxkí:lh chauj.*

u:'tzá' ka:-maxkí:-lh chauj
PRN.3SG PL.OBJ-give-PFV tortilla
 ‘S/he gave them tortillas.’

The pronoun *u:'tzá'* ‘s/he, it’ is the syntactic subject and refers to an abstract thing, the story, in (272) and an animate entity, a person, in (273).

In (274), the pronoun *u:'tzá'* is the object of a verb and refers to the MOTIVE for the event described by the verb stem.

(274) *U:'tzá' kit i'kli:laqxtá'. U:'tzá' i'kli:ma'qá:n kinlaqxta'ját.*

u:'tzá' **kit** i'k-li:-laqxtá' **u:'tzá'** i'k-li:-ma'qá:n
PRN.3SG **PRN.1SG** 1SG.SUB-INST-drip **PRN.3SG** 1SG.SUB-INST-throw

kin-laqxta'ját
 1OBJ-tears

‘It’s why I cry; it’s why I tear.’ [RVA: Cuentos 82]

The pronoun *u:'tzá'* is the applied object,¹⁶ which is the object introduced by the instrumental prefix *li:-* in the verbs *li:laqxtá'* ‘A cries because of Y’ and *li:ma'qá:n* ‘A bawls because of Y’. The pronoun refers to the MOTIVE, or REASON, for the event described by the verb. The subject and object pronouns in the first clause in (274) are also fronted to a pre-verbal position making the order of element object-subject-verb. Pronouns in general are commonly fronted appearing before the verb in a focalized position.

Possessive pronouns are formed with the addition of possessive affixes to the base *la* ‘(one’s) own’. Plural possessive pronouns further take the plural possessive suffix *-ka'n*, as shown in Table 7.

Table 7: ZT Possessive Pronouns

Person	Singular	English gloss	Plural pronoun	English gloss
1	<i>kilá</i>	‘mine’	<i>kilaká'n</i>	‘ours’
2	<i>milá</i>	‘yours’	<i>milaká'n</i>	‘yours (PL)’
3	<i>i'xlá</i>	‘its’	<i>i'xlaká'n</i>	‘theirs’

The possessive prefixes that are found on nouns are *kin-* (1POSS), *min-* (2POSS), and *i'x-* (3POSS) for the person of possessor and *-ka'n* (PL.POSS) for the number of possessor. These prefixes undergo *-n* elision before sonorant consonants and are realized as *ki-* and *mi-* for first- and second-person possessor as described in §4.2.2. The third-person possessive pronoun *i'xlá* ‘its’ and *i'xlaká'n* ‘theirs’ may be the source of the third-person pronoun *xla* ‘s/he, it’ and *xlaká'n* ‘they’ shown in Table 6 above.

The examples in (275)-(276) show the possessive pronouns in copular constructions.

(275) *Wa:má:' chichí' kilá.*

wa:má:' chichí' **kin-la**
 this dog **1POSS-own**
 ‘This dog is mine.’

¹⁶ The term “applied object” or “applicative object” is used in the sense of Peterson (2007: 39); the term refers to the participant that is introduced as an oblique object of some sort by an applicative marker.

(276) *Wa:má:' chichí' i'xlaká'n.*
 wa:má:' chichí' i'x-la-ka'n
 this dog 3POSS-own-PL.POSS
 'This dog is theirs.'

There are no examples in the database of the possessive pronouns in non-elicited contexts and the ones that are present appear as predicate nominals, as shown in (275)-(276).

3.4.2 Demonstratives

Demonstratives in ZT express degrees of spatial deixis and introduce noun phrases or may function as anaphoric pronouns. Demonstratives are formed, following Beck (2004), with a deictic element, *a:'* ~ *wa:(')*- (PROX) or *a'j-* ~ *wa:'j-* (DIST), combined with three of the four stative posture verbs, *wi:* 'sit', *ma:'* 'lie' and *ya:* 'stand'. Only some demonstratives have been identified in ZT and no attempts were made to elicit these forms. Since it is not clear how the whole system works, the analysis here follows the system described for UNT in Beck (2004) since this system seems to closely resemble the demonstratives found for ZT. Table 8 illustrates those demonstratives in ZT that were found in the database.

Table 8: ZT Demonstratives

Posture root	Proximal	Distal	Definite
<i>wi:</i> 'sit'	<i>a:'wí:</i>	<i>a'jwí:</i>	
<i>ma:'</i> 'lie'	<i>a:'má:'</i>	<i>a'jmá:'</i>	
	<i>wa:má:'</i>	<i>a'jma:'chá</i>	<i>tzamá:</i>
	<i>a:'yá:</i>	<i>a'jyá:</i>	
<i>ya:</i> 'stand'		<i>wa:'jyá:</i>	
		<i>wa:'jya:chá</i>	

The demonstrative system in Table 8 resembles those forms in UNT, where Beck (2014: 26) found that the demonstratives distinguish three degrees of spatial deixis (proximal, medial, distal). However, no medial demonstratives were documented for ZT. An additional demonstrative labelled 'specific', *tzamá:* 'that', following Beck (2011a: 54), does not distinguish between degrees of spatial deixis. Further research, however, is needed

to confirm if this analysis holds for ZT. One way this distinction may be investigated is by presenting speakers with objects of various configurations and in various positions and locations (near to farther) to elicit which demonstratives are used in specific cases.

Demonstratives are formed with a deictic element [*a:'*- (PROX), *a'j*- (DIST), or *w*- (DEM)] and a stative posture base that encodes the posture or configuration of the object, as seen in (277)-(279).

(277) *a'jwí: tasáj*
a'j-wi: tasáj
DIST-sit cup
 'this cup'

(278) *a'jyá: chi'k*
a'j-ya: chi'k
DIST-stand house
 'that house'

(279) *a'jma:'chá sé:'qna'*
a'j-ma:'-cha sé:'qna'
DIST-lie-DIST banana
 'that banana'

The deictic element *a'j*- (DIST) combines with a stative posture base, *wi:* 'sit' in (277), *ya:* 'stand' in (278), and *ma:'* 'lie' in (279), which are selected by the dominant positional configuration of the nominal complement. The example in (279) further shows that the suffix *-cha* 'DIST', which is found on verbs, appears suffixed to the demonstrative. In UNT, the demonstrative with the cognate posture verb *ma:'* 'lie' is the default used with objects in any posture. In ZT, *wi:* 'sit' seems to be the default posture in verb expressions (see §5.3.2) and so the default posture for demonstratives still needs to be confirmed.

Demonstratives always appear as the left-most element in the noun phrase, as in (280)-(281).

(280) *Tzamá: misín tatatampu:xtoqó:lh.*
tzamá: **misín** ta-ta-tampu:-xtu-qo:-lh
that jaguar 3PL.SUB-INCH-bottom-out-TOT-PFV
 'All those jaguars went far away.' [MCC: Llorona 7]

so it may be the case that more demonstratives could be documented with a larger corpus.

3.4.3 Numerals and Numeral Classifiers

Numerals in ZT are bound roots that are obligatorily prefixed with a classifier when counting to 39. Numeral roots can combine with about 35 different numeral classifiers that have been documented for ZT. Numeral classifiers in ZT, many of which have been grammaticalized from body-part terms (cf. §3.3.3), group the set of nouns in the language into different semantic categories. Some semantic categories of numeral classifiers are described as “sortal” classifiers in the linguistic literature (Grinevald 2000, 2015; Aikhenvald 2000, 2017), where the classifier selects an inherent property of the noun, such as animacy, shape, or form. Other classifiers function as “mensurals” (Grinevald 2000, 2015; Aikhenvald 2000, 2017), where the classifier contributes to the meaning of the noun by selecting a contingent property of the nominal referent, such as its arrangement (rolls, bunches, fistfuls), while other classifiers are selected on an idiosyncratic basis. This section presents the numeral system in ZT and some of the semantic classes and functions of the numeral classifiers.

Numerals up to 39 are formed by a bound numeral root prefixed with one of thirty-five numeral classifier prefixes, which group the set of nouns in the language into different semantic categories. In counting, ZT uses a vigesimal numeral system, constructed on the numeral base *puxám* ‘twenty.’ Table 9 illustrates the numerals from 1 to 100 with the default, or generic, classifier prefix *laqa-*, which is not used with the numeral base after 39.

Table 9: ZT Numerals

Number	ZT numeral	Number	ZT numeral
1	<i>laqatín</i>	11	<i>laqakaujtín</i>
2	<i>laqatú'</i>	20	<i>laqapuxám</i>
3	<i>laqatutún</i>	30	<i>laqapuxamakáuj</i>
4	<i>laqatá:'ti'</i>	40	<i>tu'puxám</i>
5	<i>laqakitzés</i>	50	<i>tu'puxamakáuj</i>
6	<i>laqacha:xán</i>	60	<i>tu'tunpuxám</i>
7	<i>laqatojón</i>	70	<i>tu'tunpuxamakáuj</i>
8	<i>laqatziyén</i>	80	<i>ta:'ti'puxám</i>
9	<i>laqanajá:tza</i>	90	<i>ta:'ti'puxamakáuj</i>
10	<i>laqakáuj</i>	100	<i>kitzispuxám</i>

The use of a vigesimal numeral system, as is found in ZT, is typologically characteristic of languages in the Mesoamerican region (Campbell 2013). Only one speaker (out of 8 consulted) recalled the number for 100, which was given as *kitzispuxám* ‘five twenties’ and no numerals over 110 were recalled.

Numerals in ZT quantify the head noun in noun phrases, as shown in (285).

(285) *Te:maqá:'lh qantín kí'wi' naktéj lha: laktaxtú Maria.*

te:–maqá:'n–lh **qan–tin** **kí'wi'** nak=tej
 PATH–throw–PFV NUM.CLF(LONG-THIN)–one stick LOC=road

lha: la'q–taxtu Maria
 where ALL–leave Maria

‘He passed by and dropped a stick on the road where Maria comes out.’ [FAS: Woodchopper 17]

In (285), the numeral root *-tin* ‘one’ takes the classifier *qan-*, which is used with nouns that denote long and thin entities. The numeral *qantín* ‘one long and thin’ quantifies the noun *kí'wi'* ‘tree, stick’, which is the object of the verb *maqá:'n* ‘A throws X’.

A numeral can function as the anaphoric head of a noun phrase, as seen in (286).

(286) *E: 'laqtzilh i'xwanqén sqá'ta', tantu'tzá'!*
 e:' laqtzín-lh i'x-wanqén sqá'ta' **tan-tu'**=tzá'
 and see-PFV 3POSS-frog child NUM.CLF(ANIMATE)-two=now
 'And the child saw his frog; now (there were) two of them!' [RLP: Frog story 37]

The numeral *tantu'tzá'* 'two animate entities' in (286) is used as a pronominal element in reference to the frog's offspring mentioned in the narrative. The numeral helps track the referent in the discourse context, where the prefix *tan-* reduces that referent to nouns that refer to animals or humans. This use of the numeral to function as an anaphor is also found with inanimate referents.

Numerals may take an additive prefix *a:'* to signify that the amount expressed by the numeral base is an additional amount, as the examples in (287)-(288).

(287) *Ka'kti'latamá:lh a:'la'qatá:'ti' laqakitzís ká:ta'!*
 ka-i'k-ti'-latamá:-lh **a:'**-laqa-tá:'ti'
 OPT-1SG.SUB-POT-live-PFV **ADD**-NUM.CLF(GENERIC)-four

 laqa-kitzís ká:ta'
 NUM.CLF(GENERIC)-five year
 'May I live another four or five more years!' [RVA: Cuentos 96]

(288) *Nai'kwa'palá a:'pa:tín tasáj kapén.*
 na-i'k-wa'-palá **a:'**-pa:-tín tasáj kapén
 FUT-1SG.SUB-drink-RPT **ADD**-NUM.CLF(CONTAINER)-one cup coffee
 'I will drink another cup of coffee.'

The numeral in (287) expresses an additional amount of years with the numeral *a:'la'qatá:'ti'* 'four more'. The speaker uses the generic classifier *la'qa-*, which does not express a specific semantic category. In (288), the classifier *pa:-*, most commonly used with nouns that refer to containers, is prefixed with the additive *a:'*, and combines with a numeral root forming *a:'pa:tín* meaning 'another cup'.

ZT has a rich system of 35 numeral classifiers that divide nouns into different categories. These categories, which are fairly typical for numeral classifiers, may reflect an inherent property of the noun, referred to as "sortal" classifiers, or may express a measure necessary for counting the noun, referred to as "mensurals" (Aikhenvald 2017, 2000; Grinevald 2015, 2000). In some cases, a classifier may be selected by the noun on an idiosyncratic or conventional basis.

In ZT, numeral classifiers that function as sortals include those selected based on the type of living thing that is expressed by the noun. For example, the classifier *cha:'-* is used with nouns that refer to animate entities, specifically humans, as seen in (289), and animals as in (290). The classifier prefix *pu:lak-* is used with nouns that refer to plants, as shown in (291).

(289) *cha:'tín chi'xkú'*

cha:'-tin chi'xkú'
 NUM.CLF(ANIMATE)—one man
 'one man'

(290) *cha:'tín xkí'ta*

cha:'-tin xkí'ta
 NUM.CLF(ANIMATE)—one bat
 'one bat'

(291) *pu:laktín kapén*

pu:lak-tin kapén
 NUM.CLF(PLANT)—one coffee.plant
 'one coffee plant'

Classifiers that function like sortals also reflect other intrinsic physical properties of the noun, such as its dimensionality, shape, or form. The classifier *qan-*, for instance, typically appears with nouns whose referents are long-thin entities, such as sticks, fingers, sugarcane, and hair, as seen in (292). The classifier *peq-* most commonly appears with nouns that refer to flat-thin entities, such as cloth, leaves, paper, or bill(s), as shown in (293).

(292) *qantín yaj*

qan-tin yaj
 NUM.CLF(LONG/THIN)—one hair
 'one hair'

(293) *peqtín tumí:n*

peq-tin tumí:n
 NUM.CLF(FLAT/THIN)—one money
 'one dollar (bill)'

Classifiers that function as mensurals in ZT are selected based on a quantitative measure of the nominal referent that is contingent on context. The classifier *kilh-* expresses the unit 'basketfuls' for measuring the noun *pantzín* 'bread' in (294). In (295), the classifier *tunka:-*

(303) *Choj maqtín chu:' wa'chi' kataa'mpá i'xamígos.*
 choj **maq-tin** chu: wa'chi' ka-ta-a'n-pa
 now NUM.CLF(TIME)-one PTCL like.this OPT-3PL.SUB-go-RPT:PFV

i'x-amígos
 3POSS-friends
 'Now, one time, like that, his friends wanted to go again.' [RLP: Chameleon 40]

Numerals with the classifier *maq-* form constructions that express time as measured by the clock, as in (302), where the numeral appears in a noun phrase that expresses information about the time of day in which the event takes place. In (303), the numeral with *maq-* is used as an adverb, which temporally modifies the predicate and refers to the number of times the action of the verb was performed, meaning something like 'X times' (i.e. 'once', 'twice').

Many classifiers in ZT may be etymologically related to body-part terms, for example, the generic classifier *laqa-* may have a nominal origin, *laqán* 'face'. These classifiers may have been extended to categorizing nouns in the numeral system based on function or shape-related properties of the body-part denotation, as originally observed by Levy (1992a, 1999a) for Papantla Totonac. The classifier *peq-* in ZT, for instance, may be related to *peqén* 'wing, arm', which has been semantically extended based on shape to classifying relatively flat and thin entities, such as cloth, leaves, and paper, in the classifier system. Table 10 exhibits the numeral classifiers, followed by the potential anatomical source, if there is one, and the semantic class of nouns that select the classifier.

Table 10: Numeral Classifiers (origin and classification)

Classifier	Source noun	Semantic class
<i>laqa-</i>	<i>laqán</i> 'face'	generic
<i>cha:'-</i>	<i>cha:'n</i> 'shin'	humans and animals (≤ 2); chilies, seeds, pods
<i>tan-</i>	<i>táni'</i> 'buttocks'	humans and animals (> 2)
<i>pu:lak-</i>	<i>pu:lákni'</i> 'inside'	plants
<i>a'q-</i>	head-related	round objects (fruits, eggs, plates, heads, rocks); time (day, week, month, year)
<i>qan-</i>	-	long-thin
<i>mak-</i>	<i>mákni'</i> 'body'	tortillas, piece of bread

<i>peq-</i>	<i>peqén</i> ‘arm, wing’	flat-thin
<i>pa:-</i>	<i>pa:n</i> ‘belly’	containers
<i>tu:-</i>	-	containers
<i>kih-</i>	<i>kihni</i> ‘mouth’	baskets, boxfuls
<i>pu:-</i>	<i>pu:n</i> ‘vagina’	articles of clothing
<i>qe:-</i>	<i>qe:n</i> ‘back’	round bulky, bananas
<i>pix-</i>	<i>píxni</i> ‘neck’	bunches (flowers, beans), rolls
<i>mus-</i>	-	bunches (bananas)
<i>qalh-</i>	mouth-related	pieces of meat
<i>pu:n-</i>	-	loads (wood)
<i>maq-</i>	-	time
<i>mix-</i>	-	days
<i>pi:-</i>	<i>pi:n</i> ‘breast’	chunks of cooked pumpkin or squash
<i>qoq-</i>	head-related	fistfuls; handfuls
<i>ta:pa:-</i>	-	types
<i>kihla'q-</i>	-	steps, stories of a house; wood chunks
<i>kihlmak-</i>	-	stacks of wood, bunches of bananas, stories of a house, egg trays
<i>pa:xtu:-</i>	<i>pa:xtú:n</i> ‘side of body’	side; flat object
<i>tunka:'-</i>	-	halves
<i>pi:sti:-</i>	-	fruit wedges
<i>a'qa'qan-</i>	-	extended objects (ears, handles)
<i>cha:'qan-</i>	-	strands of yarn, socks
<i>pe:qe:qan-</i>	-	arms, tree’s branches; straps
<i>maqaqan-</i>	<i>maq-</i> ‘hand-related’	hands, gloves, handles/straps used to carry things
<i>qoqlaqa-</i>	<i>qoq-laqa-</i> ‘head-face’	bird (head)
<i>tantu:qan-</i>	<i>tantu:-</i> ‘foot-related’	shoes
<i>a'qlhtantu:-</i>	-	pairs of shoes

The size of the inventory of numeral classifiers documented for the Totonacan languages varies greatly from language to language. Only 13 classifiers have been documented for Misantla Totonac (MacKay 1999), while the largest inventory is in Upper Necaxa Totonac with 41 classifiers (Beck 2011a). The most comprehensive description of

the meanings and functions of classifiers as well as their etymologies, for Totonacan can be found for Upper Necaxa Totonac (Garcia-Vega 2018). Other descriptions of the classifier system are found for Huehuetla Tepehua (Kung 2007b) and Papantla Totonac (Levy 2003 & 1992a).

3.4.4 Negative Particle

Negation in ZT is expressed by the negative particle *lha:* in preverbal position, as in (304)-(305). This position is generally reserved for clausal and predicate modifiers.

(304) *Lha: kila:ta:'latulakutuná:uj.*

lha: kin-la:-ta:'-la-tula-kutun-a:-uj
NEG 1OBJ-RCP-CMT-be-sit-DSD-IMPF-1PL.SUB
 'You all don't want to live with me.' [RVA: Cuentos 24]

(305) *Lha: kakilhtáya' tzamá: kí'wi', qowa'jwa'!*

lha: ka-kilh-táya' tzamá: kí'wi' qowa'jwa'
NEG OPT-mouth-take:2SG.SUB:PFV that stick ugly
 'Don't put that stick in your mouth! It's ugly!'

In non-verbal predicates, or copular constructions, the negative particle precedes the nominal (306) or adjectival predicate (307).

(306) *Wi'x lha: i'xte:kú'.*

wi'x **lha:** i'x-te:kú'
 PRN.2SG **NEG** 3POSS-boss
 'You are not his boss.'

(307) *Wi'x lha: ta:lhma:n.*

wi'x **lha:** ta:lhma:n
 PRN.2SG **NEG** tall
 'You are not tall.'

Cognate forms of the negative particle in other Totonacan languages include *lha:* in Filomeno Mata, and *la:* in Coahuilán and Misantla. The cognate prefix is *ja:* in UNT, although *lha:* is also found in some utterances from older speakers (Beck, p.c.). Negation is marked with the particle *tu:'* 'not' in Apapantilla.

3.4.5 Interrogatives

Polar questions (*yes/no* questions) are identical in form to the corresponding affirmative statement, with the exception of a rising intonation at the end of the phrase (308)-(310). The arrow at the end of the gloss represent a rising ↗ or falling ↘ intonation.

(308) *Tze lawila'?*

tze la-wíla'
well do-sit:2SG.SUB
'Are you okay?' ↗
'You are okay.' ↘

(309) *Nawá'ya'?*

na-wá'ya'
FUT-eat:IMPF:2SG.SUB
'Are you going to eat?' ↗
'You are going to eat.' ↘

(310) *Lakaskí'na' nakma'qtayayá:ni'?*

laka-skí'na' na-i'k-ma'qtaya-ya:-ni'
face-ask:IMPF:2SG.SUB FUT-1SG.SUB-help-IMPF-2OBJ
'Do you want me to help you?' ↗
'You want me to help you.' ↘

Prosody is the only factor that distinguishes the polar question from the affirmative statement. The marking of polar questions with a rise in intonation at the end of the clause is a typologically common property of natural languages (Maddieson 2010).

Information questions are formed with a pronominal element and a particle, *chu:* (PTCL) which signals that the phrase or clause is an interrogative. Table 11 illustrates the interrogative particles used to form information questions in ZT.

Table 11: Interrogative Pronouns

Interrogative	English gloss
<i>ti: chu:</i>	‘who’
<i>tu: chu:</i>	‘what, why, how’
<i>tu: chu: ya:</i>	‘which one (thing)’
<i>ti: chu: ya:</i>	‘which one (person)’
<i>lha: chu:</i>	‘where, how many’
<i>lha: chu:nín</i>	‘when’
<i>chu:</i>	‘how’
<i>chu:nú:</i>	‘why, how’

The interrogative pronouns, *ti:* ‘who’ and *tu:* ‘what’, followed by the particle *chu:* always appear at the left-most edge of the clause, as in (311)-(313).

(311) *Ti: chu: tatlá'wa'?*

ti: **chu:** ta:–tlá'wa'
who **PTCL** CMT–make:2SG.SUB:PFV
‘Who did you do it with?’

(312) *Tu: chu: li:tlá'wa'?*

tu: **chu:** li:–tlá'wa'
what **PTCL** INST–make:2SG.SUB:PFV
‘What did you do it with?’

(313) *Tu: chu: li:kalhwána'?*

tu: **chu:** li:–kalhwána'
what **PTCL** INST–cry:2SG.SUB:IMPF
‘Why do you cry?’

The pronominal element of the interrogative particles encodes the animacy (human or non-human) of the head noun, which in (311)-(313) corresponds to one of the objects of the finite verb. The pronouns are followed by an interrogative particle *chu:* (PTCL) to form questions requesting information about the participants (311)-(312) or the REASON for the action expressed by the verb in (313).

Interrogatives requesting information about selecting one or more things, or people, from a definite set is formed with the interrogative particles *tu: chu:* followed by *ya:* as seen in (314).

- (314) *Tu: chu: ya: u:'tzá' lakaskí'na?*
tu: **chu:** **ya:** u:'tzá' lakaskí'n-a
what **PTCL** **PTCL** **PRN.3SG** **want-IMPF**
 'Which one does s/he want?'

The combination of *tu: chu: ya:* constitute the interrogative phrase expressing what would be translated into English as 'which (thing)'. The particle *ya:* in the interrogative resembles the stative posture verb *ya:* 'stand' described in §5.3.2.

Questions requesting information about the manner in which the event takes place are formed with the interrogative particle *chu:* on its own, as in (315)-(316).¹⁸

- (315) *Chu:n tlawáka' tzamá:?*
chu:≡n tlawá-ka' tzamá:
how≡JUNCT **make-IDF:PFV** **that**
 'How does one make that?'

- (316) *Chu: li:tatú'kxli' kí'wi'?*
chu: li:-ta-tu'kx-li' kí'wi'
how **INST-DCS-break-PFV** **stick**
 'How did the stick break?'

The verb *tlawá* 's/he makes it' in (315) is in the indefinite form, which attributes an agentless or generic subject reading *tlawáka'* 'someone made it'. The interrogative particle *chu:* signals a request for information about the manner the event takes place. In (316), the transitive verb *tu'kx-* 's/he breaks it' takes the decausative prefix *ta-* which removes the AGENT deriving the verb *tatu'kx-* 'it breaks'. The verb is further derived with the instrumental prefix *li:-* which adds an oblique object expressing the REASON for the action denoted by the verb, *li:tatu'kx-* 'it breaks because of something'. The interrogative signaled with *chu:* 'how' requests information about the reason or manner of the breaking event.

¹⁸ The epenthetic $\equiv n$ in this example is being analyzed as a non-meaning bearing element that is inserted at phonological junctures for prosodic or other purposes (see §2.3.1 for a description on phonological junctures); this epenthetic nasal has been described as commonly found on relativizers and particles in other Totonacan languages as well (Román Lobato 2008, Moore 2016).

Questions requesting information about the location or time of an event are formed with a pronominal element *lha:* ‘where, when’ followed by the interrogative *chu:* or *chu:nín*, as seen in (317)-(318).

(317) *Lha: chu: wíla'?*

lha: **chu:** wíla'
where **PTCL** sit:2SG.SUB:IMPF
 ‘Where do you live?’

(318) *Lha: chu:nín ta't?*

lha: **chu:nín** ta't
when **PTCL** come:2SG.SUB:PFV
 ‘When did you arrive?’

The particles *lha: chu:* followed by a quantifier is used to request information about quantity, as in (319).

(319) *Lha: chu: tanlá't chi'xku'wí'n?*

lha: **chu:** tan-la't chi'xku'-wí'n
how **PTCL** NUM.CLF-how.many man-PL
 ‘How many men?’

The interrogative pronoun *lha:* in (317)-(319) is heterosemous with the negative particle (see §3.4.4), and with the subordinator *lha:* ‘when, where, how’, which is used to introduce complement clauses of place and time (see §3.5).

In summary, §3.4 describes the morphology of several grammatical classes in ZT and illustrates some of their distributional properties. Pronouns make distinctions for person and number and commonly appear in focal positions before the verb. Demonstratives are semantically and morphologically complex having been grammaticalized from the set of posture verbs combined with a deictic element. Demonstratives may also be found within the noun phrase or function pronominally as an anaphoric element.

Numerals in ZT are formed from a bound numeral root prefixed with one of 35 classifiers, most of which have been grammaticalized from the subclass of nouns referred to as body-part terms. The classifier prefix is selected by a property of the nominal head and includes semantic categories such as type of living being, shape, dimension, or form, or the configuration or arrangement of the nominal referent, such as bunches, stacks, or

basketfuls. Numerals quantify the noun within the noun phrase and can also be used anaphorically, while some numeral constructions have adverbial functions.

Negative and interrogative particles appear in pre-clausal position or at the left-most edge of the clause, similar to the position taken by adverbs. All the interrogative pronouns *ti*: ‘who’, *tu*: ‘what’, and *lha*: ‘where, when, how’ form a heterosemous set with subordinating particles. Table 11 showed the list of interrogative particles that are heterosemous with a set of elements that signal subordination in ZT. A list of interrogative pronouns and subordinators for the Totonacan languages can be found in Beck (2017a: 38).

3.5 Subordinators

This section presents subordinating particles that make complex sentences in ZT. Subordinators introduce finite predicates that are embedded within a main clause. There are many kinds of subordinators in ZT, although this section will focus on those subordinating particles that are heterosemous with the interrogative particles presented in Table 11. This section describes the structural properties of subordinate clauses but is organized by the function the subordinating particle performs since the same particle may introduce different types of embedded clauses. Three subordinated clause types are identified: relative, complement, and adverbial clauses. Relative pronouns that add a finite clause modifying a noun are described in §3.5.1. These clauses include headless relatives, where the entire clause refers to a syntactic participant of the matrix verb. Complementizers that add a finite clause that functions as an argument of the matrix verb are discussed in §3.5.2., and particles that add an adverbial clause that serves as an adjunct to the matrix clause are illustrated in §3.5.3. These particles are widespread and always appear at the left-most edge of the embedded clause. The embedded clause does not take special morphology associated with subordination, neither on the matrix nor subordinated verb. In this section, subordinated clauses have been enclosed in square brackets [].

3.5.1 Relative Pronouns

Relative pronouns introduce clauses that modify a noun phrase. Relative clauses, as defined by Comrie (1989: 143), specify the referent of a noun by restricting it to only those referents of which the proposition holds. Relative pronouns in ZT mark the animacy of the head noun of the relative clause, specifically *tu:* (NREL) for non-humans and *ti:* (HREL) for humans. The non-human relative pronoun *tu:* at the left-edge of the embedded verb is shown in (320).

- (320) *Kit i'kmaqni:lh chichi' tu: i'xkakutun sqá'ta'.*
 kit i'k-maqni:-lh chichi' [tu: i'x-xka-kutun sqá'ta']
 PRN.1SG 1SG.SUB-kill-PFV dog NREL PST-bite:IMPF-DSD boy
 'I killed the dog that wanted to bite the boy.'

In (320), *tu:* (NREL) agrees with the animacy of the head noun of the relative clause, *chichi'* 'dog,' which is the object of the matrix verb *i'kmaqni:lh* 'I killed (the dog)'. The head of the relative clause *chichi'* appears external to the subordinated predicate; this construction is described as an "externally headed relative clause" in Dryer (2013). This type of relative clause has also been described as "subject-centered" in Comrie and Kuteva (2013) since the head noun is co-referential with the subject of the subordinated verb *i'xkakutun* '(the dog) wanted to bite (the boy)'. The external head of the relative clause can also be "object-centered," where the head noun is co-referential with the object of the embedded verb, as in (321)-(322).

- (321) *I'kli:cha'qxlálin kí'wi' tu:n te:máka'.*
 i'k-li:-che'qxlá-lh=i=nak kí'wi' [tu:≡n te:-máka']
 1SG.SUB-INST-stumble-PFV≡JUNCT=LOC stick NREL≡JUNCT PATH-drop:2SG.SUB
 'I stumbled on the stick that you dropped in passing.' [FAS: Woodchopper 24]

- (322) *Tatu:nú:t tun ti'maxki:ni' milaqapásni' ka:wálh chichi'.*
 tatu:nú:t [tu:≡n ti'-maxki:-ni' min-laqapásni']
 shoe NREL≡JUNCT POT-give:IMPF-2SG.OBJ 2POSS-family.member

 ka:-wa-lh chichi'
 PL.OBJ-eat-PFV dog
 'The dog was going to eat the shoes your cousin would give you.'

The head noun *ki'wi* 'stick' in (321) and *tatu:nú:t* 'shoe' in (322) are the object of the matrix and subordinated verb. (320)-(322) show that the subject or an object of the embedded verb can be the target for modification by a relative clause.

An externally headed relative clause with the human relative pronoun *ti:* is shown in (323).

(323) *Pus chon tzamá: ti: i'xlamá:' li:taqamá:lh wa:tzá:'.*
 pus chon tzamá: [ti: i'x-la-ma:] li:-taqamá:-lh wa:tzá:'
 well PTCL that HREL PST-be-PROG INST-be.in.charge?-PFV here
 'Well, that (person) who was here was in charge.' [SLO: Cuentos 59]

In (323), *tzamá:* 'that' is a (non-deictic) demonstrative that can also be used pronominally as the anaphoric head of an animate or inanimate noun phrase (see §3.4.2). The human relative pronoun *ti:* agrees in animacy with the referent of the external head *tzamá:* 'that', which in this context refers to a specific person that is coreferential with the subject of the embedded clause. This type of clause headed by a demonstrative has been described as a "light-headed" relative in Citko (2004).

Another type of relative clause is known as headless relatives, where the head of the relative clause has been elided. In headless relative clauses, the entire clause denotes a syntactic participant of the verb, as shown in (324)-(325).

(324) *Ti: a'nú' ka:wá' lakstín xka:laqmaqe:'qlhamá:'.*
 [ti: a'nú' ka:-wa' lakstín] i'x-ka:-laq-maqe:'qlha-ma:'
 HREL over.there PL.OBJ-eat:IMPF children PST-PL.OBJ-INTNS-scare-PROG
 'The one over there who eats the children used to go scaring them.'
 [MCC: Witch story 2]

(325) *Mat tzi:'sa i'xtaskujma:'nán ti: i'xtatluma:'nán.*
 mat tzi:'sa i'x-ta-skuj-ma:'-nan [ti: i'x-ta-tlu-ma:'-nan]
 QTV night PST-3PL.SUB-work-PROG-ST.PL HREL PST-3PL.SUB-do-PROG-ST.PL
 'It's said those who were doing (the construction) were working at night.' [SLO: Cuentos 141]

In (324), *ti:* (HREL) agrees with the animacy of the referent of the subject of the embedded clause *ka:wá' lakstín* 's/he eats the children' which refers to a female witch in the narrative. In (325), *ti:* (HREL) agrees with the animacy of the referent of *i'xtatluma:'nán* 'they were doing' which refers to the construction workers. The subordinate clauses in (324)-(325) do

not have a head noun, but rather the entire subordinated clause refers to the AGENT of the matrix verb and functions as its syntactic subject.

The combination of *ti:* or *tu:* with *ya:* introduce a subordinate clause that specifies one or more people or things from a set, as in (326)-(327).

(326) *Chu:wáj tze: nalaksáka' ti: ya: chi'xkú' ta:'tulakutúna'.*

chu:wáj tze: na-laksák-a'
now good FUT-choose-IMPF:2SG.SUB

[**ti:** **ya:** chi'xkú' ta:'-tulá-kutun-a']
HREL PTCL man CMT-sit-DSD-IMPF:2SG.SUB
'Now you can choose well which man you want to marry.'

(327) *Chu:wáj tze: nalaksáka' tu: ya: putláuj lakaskí'na'.*

chu:wáj tze: na-laksák-a'
now good FUT-choose-IMPF:2SG.SUB

[**tu:** **ya:** putláuj lakaskí'n-a']
NREL PTCL car want-IMPF:2SG.SUB
'Now, you can choose well which car you want.'

The combination of *ti: ya:* and *tu: ya:* adds an embedded clause of the type expressing 'which (one/person)' and 'which (one/thing)'. The head noun appears internal to the embedded clause, where *ti:* agrees with the animacy of the head *chi'xkú'* 'man' in (326), and *tu:* with the animacy of *putláuj* 'car' in (327). In both cases, the internal head corresponds to the object of the matrix and relative clause. Interrogatives requesting information specifying one or more from a set are similarly formed with *ti: chu: ya:* 'which (person)' or *tu: chu: ya:* 'which (thing)' presented in §3.4.5.

Finally, the particle *lha:* 'where, when', which adds an adverbial clause of place or time (see §3.5.3), is seen in (328) functioning as a relative pronoun.

(328) *Te:maqá:lh qantín kí'wi' naktéj lha: laktaxtú Maria.*

te:-maqá:n-lh qan-tin kí'wi'
PATH-drop-PFV NUM.CLF-one stick

nak=tej [**lha:** la'q-taxtú Maria]
LOC=path **where** ALL-leave Maria
'He passed by and dropped a stick on the road where Maria comes out.' [FAS: Woodchopper 17]

The particle *lha:* functions as a locative relative pronoun modifying the external head noun *tej* ‘path’ in (328), which is introduced into the clause as an adjunct with the locative clitic *nak=*. The head of the relative is a locative noun phrase *naktéj* ‘on the path,’ which is an adjunct in the matrix clause and a gapped adjunct of the embedded clause *laktaxtú Maria* ‘Maria comes out (the path)’.

3.5.2 Complementizers

Some subordinating particles function as complementizers which introduce clauses that behave as an obligatory argument of the matrix verb. Complement clauses do not modify nouns and the entire clause does not refer to a participant of the matrix verb as in headless relative clauses, but rather a complement clause may refer to an event or state of affairs that acts as the subject or object argument. The two most widespread complementizers are the particles *chi:* and *chu:*, the latter of which is related to the interrogative particle presented in Table 11. These complementizers signal a subordinate clause expressing the manner in which an event takes place, as seen in (329)-(331).

(329) *E:' pus tonces talakpu'tzálh chu: tala:le:'qxoqó:lh.*

e:' pus tonces ta-lak-pu'tzá-lh [chu: ta-la:-le:'qxoqó:-lh]
 and INTJ then 3PL.SUB-INTNS-look.for-PFV how 3PL.SUB-RCP-trick-PFV
 ‘And well then they looked for ways to trick each other.’ [SLO: Cuentos 63]

(330) *Kit i'ka'tzí: chu: i'klawí:.*

kit i'k-ka'tzí: [chu: i'k-la-wi:]
 PRN.1SG 1SG.SUB-know how 1SG.SUB-be-sit
 ‘I know how I live.’ [RVA: Cuentos 86]

(331) *La'qa'tíli' chi:n taxtuwílanán.*

la'qa'tí-li' [chi:≡n ta-xtu-wíla-nan]
 like-PFV how≡JUNCT INCH-out-sit-ST.PL
 ‘He liked the way (the water) came out.’ [Story of 19]

The complementizers *chu:* in (329) and (330) and *chi:* in (331) add a clause that serves as the argument of the matrix verb and expresses the manner in which the event of the embedded verb takes place.¹⁹

The particle *chi:* introduces a clausal complement that expresses an event or state of affairs, as in (332)-(333).

(332) *Kaklh i'kqaxmá'ta chi: wankán.*

kaklh i'k-qaxmá't-a **[chi:** wan-kan]
 only 1SG.SUB-hear-IMPF **PTCL** say-IDF
 'I only listen to what (the bible) says.' [RVA: Cuentos 78]

(333) *Kakimaxkí:lh dios chi:'k puwán.*

ka-kin-maxkí:-lh dios **[chi:** i'k-puwán]
 OPT-1OBJ-give-PFV God **PTCL** 1SG.SUB-think
 Lit. 'May God give me what I think.'
 'May God give me understanding.' [RVA: Cuentos 99]

The embedded clause functions as an object complement of the verb of hearing in (332)

¹⁹ It is important to note that the particles *chi:* and *chu:* have other non-subordinating functions. In one case, these particles may be used emphatically, as in (a-b).

a. *Chi: i'xtawa'ká' kiní:t!*

chi: i'x-ta-wa'ká' kiní:t
how PST-inch-high.up meat
 Lit. 'How meat was hung!'
 'How there was meat!' [RVA Cuentos 54]

b. *Chu: pilí'lh maklálh!*

chu: pilí'-lh mak-la-lh
how spotted-PFV body-be-PFV
 'How his body was spotted!' [RLP: Chameleon 59]

In a second case, the particle *chi:* introduces a noun phrase as an adjunct to the matrix clause, as in (c-d).

c. *Che: a:'má:' kilhtamakúj lha:náj tu: xa'nán.*

[chi: a:'má:' kilhtamakúj] lha:-naj tu: i'x-a'nán
PTCL this time nothing-still NREL PST-exist
 'During this time, there still wasn't anything.' [Story of community 36]

d. *Chi:n kaxli'jni, i'klaqayí: xalaqstala:nqá'n.*

[chi:≡n káxli'-ni'] i'k-laqayí: xa-laq-stala:nqá'n
PTCL≡JNCT chicken-PL 1SG.SUB-like DTV-APL-white
 'Of the chickens, I like the white ones.'

chi: introduces a noun phrase that expresses the time of the event denoted by the matrix clause in (d), and a noun phrase that is coreferential with the elided object of the matrix clause in (e).

and the verb of giving in (333).

The relative pronoun *tu:* combined with the particle *chu:* signals a complement clause, as shown in (334)-(335).

(334) *A:'tzá:' na'kti'yapalá tu: chu: i'kwa'ku'tún.*

a:'tzá:' na-i'k-ti'yá-pala [tu: chu: i'k-wa'-ku'tun]
 here FUT-1SG.SUB-grab-RPT NREL PTCL 1SG.SUB-eat-DSD
 'Here I will grab again whatever I want to eat.' [RVA: Cuentos 106]

(335) *Maqa'túnu i'kpa:stá'ka tu: chu: i'kle:a'qatuyúja.*

maq-a'túnu i'k-pa:stá'k-a
 NUM.CLF-each 1SG.SUB-remember-IMPF

[tu: chu: i'k-li:-a'qa-tuyúj-a]
 NREL PTCL 1SG.SUB-INST-ear-worry-IMPF
 'Sometimes I remember what I worry about.' [RVA: Cuentos 90]

The embedded clause introduced by *tu: chu:* 'what, whatever' expresses the object of the taking event in (334) and the remembering event in (335). Interrogative structures requesting information expressing 'what' are also formed with *tu: chu:* (see §3.4.5), which makes these subordinate clauses structurally identical to the interrogative.

The particle *lha:* 'where' introduces complement clauses that express location, as shown in (336)-(337).

(336) *I'xyá: i'xchiká'ni lha: a'má:' i'xkilhtún pú:xka'.*

i'x-ya: i'x-chik-ká'n=i [lha: a'n-ma:]
 PST-stand 3POSS-house-PL.POSS=JUNCT where go-PROG

i'x-kilhtún pú:xka']
 3POSS-edge river

'Their house stood where the edge of the river runs.' [FAS: Woodchopper 4]

(337) *Tonces lha: xtalakxiti:ka' lha: xtawilá.*

tonces [lha: i'x-ta-lak-xiti:-ka'] [lha: i'x-ta-wilá]
 then where PST-DCS-INTNS-roll.up-IDF:PFV where PST-INCH-sit
 'So then where (the snake) curled up is where it sat.' [SLO Cuentos 6]

The posture verb *ya*: ‘stand’ takes the subordinated clause *lha: a'má:' i'xkilhtún pú:xka'* ‘where the river runs’ as a locative complement in (336). The two subordinated clauses introduced with *lha:* in (337) seem to form the subject and complement of a copular clause in the present tense which is expressed with the absence of a copula verb.

3.5.3 Subordinating Adverbial Particles

Some subordinating particles and subordinating adverbs add adverbial clauses that function as an adjunct to the matrix clause — that is, adverbial clauses contribute additional information that does not take an argument position of the verb. These clauses modify the matrix clause contributing information about the location, time, condition, purpose, or motive of the state or event. Some of these subordinating particles also behave like relativizers and complementizers and are found in interrogatives. *lha:* ‘where,’ for example, adds an adverbial clause expressing PLACE or LOCATION, as seen in (339)-(338).

(338) *Qoschá mónqxu' lha: i'xwa'ká' nai'xchik.*

qos-chá	mónqxu'	[lha:	i'x-wa'ká'	nak=i'x-chik]
fly-DIST	owl	where	PST-be.high.up	LOC=3POSS-house

‘The owl flies to where its house was up high.’ [FAS: Frog Story 25]

(339) *Chi'chí' ta:lhma:n i'xpu'tzamá:' lha: wa'ká' i'xchik u:'xúm.*

chi'chí'	ta:lhma:n	i'x-pu'tza-má:'
dog	high	PST-look.for-PROG

[lha:	wa'ká'	i'x-chik	u:'xúm]
where	be.high.up	3POSS-house	bumble.bee

‘The dog was looking for (the frog) up high where the bumble bee’s house hangs.’ [FAS: Frog story 18]

(340) *Choj mat chi: i'xma:pí:n i'xkilhlukút lha: i'xwí:n.*

choj	mat	chi:	i'x-ma:pí:≡n	i'x-kilh-lukút
now	QTV	how	PST-lay.out≡JUNCT	3POSS-mouth-bone

[lha:	i'x-wi:≡n]
where	PST-sit≡JUNCT

‘Now they say how (the snake_i) laid out the chewed-up bones where it_i was.’ [SLO: Cuentos 11]

Locative clauses with *lha:* ‘where’ add the GOAL location in (338) and the PLACE in (339)-(340) of the event expressed by the matrix clause and appear in clause-final positions. A

noun phrase denoting LOCATION in (339)-(338) is found internal to the subordinated clause; in contrast, the embedded locative clause does not include a noun phrase expressing LOCATION in (340). These clauses with *lha:* are similar to locative relatives in §3.5.1, which act as a modifier to the noun, and locative complements in §3.5.3, which function as a verbal complement rather than a modifier.

The particle *lha:* ‘when’ is also used to introduce adverbial clauses of time, as in (341)-(343).

(341) *Nachi'pa'kán lha:tzá' talakatzu'náje.*

na-chi'pá'-kan [**lha:**=tzá' ta-laka-tzu'naj-e]
 FUT-grab-IDF:IMPF **when**=now 3PL.SUB-face-little-TRNS
 ‘They are going to trap her now when they get close to her.’ [MCC: Witch story 6]

(342) *Lhu:wánka' wa:tzá: a'ntzá' lha: wilí:ka' i'xtakwi:ní't Zihuateutla.*

lhu:wán-ka' wa:tzá: a'ntzá'
 populate-IDF:PFV here over.there

[lha: wilí:-ka' i'x-takwi:ní't Zihuateutla]
when put-IDF:PFV 3POSS-name Zihuateutla
 ‘It was populated here when they gave it the name of Zihuateutla.’ [Story of community 39]

(343) *Lha: la'qtzili xla cho: a:'wa:ná'n...*

[lha: la'qtzín-lh=i xla] chu: a:'wa:ná'n
when see-PFV=JUNCT s/he how be.land
 ‘When he saw how the land is, (how the earth is, how...)’ [Story of community 16]

lha: ‘when’ adds an adverbial clause that contributes information about the temporal sequence of the event in (341) or the time of the event expressed by the matrix clause in (342)-(343). The subordinating particle *lha:* ‘when’ is also found with an adverbial intensifying clitic =tzá’ ‘now’ that expresses time in (341). The stress-attracting clitic =tzá’ is an enclitic that attaches to almost any lexical class, such as verbs, adverbs, adjectives, numerals, as well as the particle *lha:* ‘where, when, how’ and ‘not’.²⁰ These examples

²⁰ The particle =tzá’ most commonly appears as an enclitic on verbs, as seen in (346), (622), (627), (628), (547), (548) to list a few. The enclitic is also found on adverbs, such as in (204), (346), (712), adjectives (172), numerals (162), (286), (398), and the negative particle, as seen in (595), (621), (604), (662), (667)(652). The clitic is therefore a syntactically independent element that functions at the phrasal- or clausal-level but is phonologically dependent and carries the primary stress of its host.

further indicate that temporal clauses appear at the end or the beginning of the matrix clause.

The example with *chi*: (PTCL) signals an adverbial clause expressing time, as seen in (344), but also has a non-subordinating function used for the same purposes, as seen in (345).

(344) *Chi: xqa'qá:lh, takí:'li sqá'ta'.*

[**chi**: xqa'qá:-lh] takí:'lh≡i sqá'ta'
 PTCL dawn-PFV get.up-PFV≡JUNCT child
 'When it dawned, the boy got up.' [FAS: Frog story 4]

(345) *Chi: a:maqtu'tún qo:tanú:, i'xtatzukú tatasá misiní:'n.*

[**chi**: a:-maq-tu'tún qo:tanú:] i'x-ta-tzukú ta-tasá
 PTCL ADD-NUM.CLF-three afternoon PST-3PL.SUB-begin 3PL.SUB-scare

misin-ni:'n
 animal-PL

'At three in the afternoon, they began to scare the animals.' [RVA: Cuentos 11]

While *chi*: introduces a subordinate finite clause expressing the time of the event expressed by the matrix clause in (344), it similarly signals a temporal noun phrase that functions as an adjunct to the matrix verb in (345).

In addition to the temporal *lha*: 'when' and *chi*: (PTCL), ZT has two subordinating adverbs that function to combine clauses of time, *a'kxnika*' 'when', as seen in (346) and the truncated *a'kxni'* 'when', as in (347).

(346) *A'kxnika'tzá' xlan tzi:'swanitzá', yo:'qó'qo' wáli xla i'xmákni' sa'qá'qa' wampá.*

[**a'kxnika'**=tzá' i'x-la≡n tzi:'swáni=tza'] yo:'qó'qo'
when=now PST-be≡JUNCT become.night=now light.skinned

wan-lh≡i i'x-la i'xmákni' sa'qá'qa' wampá
 say-PFV≡JUNCT PST-be 3POSS-body white once.again

'When it finally became night, he said his body was light skinned and white again.'
 [RLP: Chameleon 38]

(347) *Kit a'kxni' i'ksta'kli', xkima'aqchi'qó:n kina:ná'.*

[kit **a'kxni'** i'k-sta'k-li'] i'x-kin-ma'aqcho'qó:'≡n
 PRN.1SG **when** 1SG.SUB-grow-PFV PST-1OBJ-stroll≡JUNCT

kin-na:ná'

1POSS-grandmother

'When I grew up, my grandmother used to take me for a stroll.' [RVA: Cuentos 17]

Unlike relativizers and complementizers, the temporal adverbs *a'kxnika'* and *a'kxni'* are not restricted to the left-most edge of the clause. While *a'kxnika'* 'when' appears in clause-initial position in (346), *a'kxni'* 'when' appears between the subject pronoun and the finite verb of the subordinate clause in (347).

The particle *sa*: 'if' functions to introduce the conditional clause in counterfactuals or hypotheticals, as seen in (348)-(349).

(348) *Sa: napi'na', nate:maqá:na' qantín kí'wi' naktéj.*

[**sa:** na-pi'n-a' na-te:-maqá:n-a']
if FUT-go:2SUB-IMPF:2SG.SUB FUT-PATH-throw-IMPF:2SG.SUB

qan-tin kí'wi' nak=tej
 NUM.CLF-one stick LOC=path

'If you go, you will drop a stick in the path.' [FAS: Woodchopper 9]

(349) *Sa: sqo'lukutúna', kapi'nchi' nakpu:tánti'!*

[**sa:** sqo'lú-kutun-a'] ka-pi'n-chi'
if urinate-DSD-IMPF:2SG.SUB OPT-go:2SUB-DIST:2SG.SUB:PFV

nak=pu:tánti'

LOC=toilet

'If you want to pee, go to the bathroom!'

The particle *sa*: 'if' signals a conditional clause in the indicative mood in (348) and (349). In the absence of an element meaning *sa*: 'if', however, conditional clauses can be formed with *tu*: (NREL), as in (350) and *chi*: (PTCL), as in (351).

(350) *Tu: xai'ká'lh i'kti:yá kí'wi', lha: tu:n tu: i'xli:tzi'tzi'nti' wani'káni Maria.*²¹

[tu: xa-i'k-a'n-lh i'k-ti:yá kí'wi']
 NREL PST-1SG.SUB-go-PFV 1SG.SUB-take-IMPF wood

lha: tu:≡n tu: i'x-li:-tzi'tzi'n-ti'
 NEG NREL≡JUNCT NREL PST-INST-be.warm-2SG.SUB:PFV

wan-ni'-kan≡i Maria
 say-DAT-IDF:IMPF≡JUNCT Maria

'If I had not gone to bring wood, you would have nothing to warm you up, he tells Maria.' [FAS: Woodchopper 29-30]

(351) *Che:'má mat i'xma:lakí:ka', i'xtze:yá:lh.*

[chi: a:'má i'x-ma:-lakí:-ka'] i'x-tze:yá:-lh
 PTCL like.this PST-CS-open-IDF:PFV PST-get.better-PFV

'If they_{IDF} had made the door open like this, (the church) would have been better.'
 [SLO: Cuentos 138]

The subordinating particles *tu:* and *chi:* add the clause expressing the condition in the counterfactuals in (350) and (351); however, the meaning of the counterfactual is contributed by the marking of the irrealis mood on the verb in the matrix and subordinate clause. The present form of the irrealis mood found in (350)-(351) is composed of the combination of the past tense prefix and the perfective suffix, described here in §5.2.3.4.

Two other subordinating adverbs are worth mentioning, *ki:nú* 'so that', as in (352) and *kúma* 'because', as in (353).

(352) *Kalakstílh-ti' kapén ki:nú xatzé naská:ka.*

ka-lak-stílh-ti' kapén
 OPT-INTNS-distribute-2SG.SUB:PFV coffee

[ki:nú xa-tze na-ska:k-a]
so.that DTV-good FUT-dry-IMPF

'Distribute the coffee so that it dries out well.'

²¹ In this example, the combination of the negative particle and relative pronoun *lha: tu:* form a pronominal element meaning 'nothing,' which functions as the head noun of the relative clause introduced with *tu:* (NREL).

(353) *Min kilaqxta'ját kúma chu:wáj i'kla'qtzima:'tzá' chuwá:j tapala:xlanán.*
 min kin-laqxta'ját **[kúma** chu:wáj i'k-la'qtzin-ma:'=tzá'
 come:IMPF 1POSS-tears **because** now 1SG.SUB-see-PROG=now

 chuwá:j tapala:xla-nan]
 now get.expensive-AP
 'My tears come out because now I am seeing that everything is very expensive.'
 [RVA: Cuentos 58]

In (352), *ki:nú* 'so that' adds the purpose while in (353) *kúma* 'because' includes the REASON or MOTIVE of the event expressed by the matrix clause. The Spanish calque *porque* 'because' is also used for this purpose.

To summarize this section, subordinating particles in ZT introduce three types of dependent clauses, namely relative clauses, complement clauses, and adverbial clauses. Four types of relative clauses were identified in ZT: externally headed relatives, light-headed relatives, headless relatives, and internally headed relative clauses in specific constructions meaning 'which (one)'. These clauses are introduced with the relative pronouns *tu:* and *ti:* which are heterosemous with the interrogative pronouns. The relative pronoun agrees with the animacy of the head of the relative clause, or with the referent denoted by the entire clause in headless relatives. The particle *lha:* may also add locative relative clauses. The data additionally show that subjects and objects are both targets for forming relative clauses.

Complementizers introduce finite clauses that act as an argument of the matrix verb. Particles that function as complementizers are *chu:* or *chi:* 'how,' *tu: chu:* 'what, whatever' and *lha:* 'where'. These particles introduce clauses that act as object complements to the matrix verb and, therefore, complement clauses typically appear after the matrix clause or clause-finally. These particles are also heterosemous with the interrogative pronouns in §3.4.1, with the exception of *chi:* which has not been found in interrogative structures.

Adverbial clauses are introduced with a subordinating particle or adverb and do not take an argument position of the matrix verb. Adverbial clauses express the LOCATION, TIME, CONDITION, PURPOSE, or MOTIVE of an event or state of affairs. *lha:* 'where, when' adds adverbial clauses of location and time and also forms questions of location and time in interrogatives. Conditional clauses are introduced with the subordinating particle *sa:* 'if' although these clauses can also be introduced with the relative pronoun *tu:* and the

complementizer *chi:* with verb forms that are in the irrealis mood. Two other subordinating adverbs were identified *ki:nú* ‘so that’ and *kúma* ‘because’, which serve to introduce clauses expressing the purpose, or reason respectively, for the event expressed by the matrix clause.

In summary, Chapter 3 has introduced the four major word classes in ZT — nouns, verbs, adjectives, and adverbs, and illustrates some of its distributional, morphological, and functional properties. This chapter also includes various clause types, simple and complex, and the order of major constituents. A number of grammatical word classes has also been presented, including pronouns, demonstratives, numerals, negative particle, and interrogatives, as well grammatical classes that function to combine clausal constituents, such as relative pronouns, subordinating particles, and complementizers. The next chapter covers the morphology of nouns and the structure of the noun phrase.

4 Nouns

This chapter describes the structure of the noun phrase and the morphology of nouns. As described in §4.1, the structure of the noun phrase is fairly rigid with some exception. In terms of morphology, nouns do not exhibit much inflection and show no morphological case or noun class agreement. They are optionally marked for plurality and express general number, so that the bare noun stem is ambiguous between a singular or plural reading outside of context. In possessive constructions, nouns inflect for person of possessor, and are optionally marked for number of possessor. Number marking of noun stems shows that most forms are lexically conditioned, as discussed in §4.2. The marking of the person and number of the possessor is presented in §4.2.2. The lexicon of nouns has a class of inalienably possessed nouns, namely, body-part and kinship terms, which always appear inflected for person of possessor and optionally for the number. Nouns may take a determinative prefix in the attributive constructions described in §4.2.3, in a pattern also found with adjectives, as discussed in §3.3.1.2.

The most productive areas of nominal morphology are the word-formation processes deriving nouns from verbs and other nominal stems, as described in §4.3. Nouns are derived from verbs with deverbalizers, the choice of which seems to be largely lexically determined, as discussed in §4.3.1. Nouns that express the AGENT of an action are derived with the “agentive” suffix, an inherently stressed suffix that is prosodically exceptional for this lexical class, as described in §4.3.2. Nouns are also formed from other nominal stems with the “place” prefix, as seen in §4.3.3. Nominal compounding in ZT display some phonological properties that distinguish them from other complex nouns, described in §4.3.5.

4.1 Structure of the Noun Phrase

This section presents the structure of the noun phrase which consists minimally of the head noun, although it may also include a demonstrative, numeral, adjective, or possessor in addition to the head noun. The structure of the NP is presented in the template below. The

template only shows structures of the noun phrase that are found in the ZT database. The parentheses () indicate that these elements are optional in the noun phrase, while the slash represents that one or the other lexical category fills the slot. There are no noun phrases, for example, that show a Demonstrative + Numeral + Noun sequence and so the template does not reflect this structure, although possible. While there are no examples in the database that simultaneously show all the possible elements of the noun phrase, the data suggest the following order of elements in (354).

(354) [(Demonstrative)/(Numeral) + (Adjective) + NOUN + (Adjective)/(NP_{POSS})]

The structure of the noun phrase is demonstrated in (355), which shows that a demonstrative precedes the adjective, which is followed by the noun.

(355) Demonstrative + Adjective + Noun

A'jyá: xakujpu:lh má:n puská:t kilaqapá'sni'.

a'jyá:	xa-kuj-pu:lh má:n	puská:t	kin-la'qapásni'
that	DTV-head-long	woman	1POSS-family.member

‘That long-haired woman is my cousin.’

The noun phrase in (355) *a'jyá: xakujpu:lh má:n puská:t* ‘that long-haired woman’ is the subject of the copular clause expressed with the absence of a copula verb in the present tense; the clause takes a nominal complement *kilaqapá'sni'* ‘my family member’. The adjective in the first noun phrase takes the determinative prefix, which restricts the referent of the noun to only those that have the property designated by the adjective. The determinative prefix on adjectives that are within the noun phrase is not obligatory, although the determinative is necessary in order for the adjective to function nominally as an argument of the verb (see §3.3.1.2).

The adjective in (356) follows the numeral and the head noun.

(356) Numeral + Noun + Adjective

I'ktama:wá:lh laqatín taqe:nú:t xasnapápa.

i'k-tama:wá:lh	laqa-tin	taqe:nú:t	xa-snapápa
1SG.SUB-buy-PFV	NUM.CLF-one	shirt	DTV-white

‘I bought a white shirt.’

Bare adjectives (cf. §3.3.1), numerals (cf. §3.4.3), and demonstratives (cf. §3.4.2) are generally the left-most element in the noun phrase. However, (356) indicates that when the adjective is prefixed with the determinative *xa-*, the adjective may follow (or precede) the noun it modifies, although the difference between the two orders is not well understood and requires further investigation.

In possessive constructions, the possessed noun agrees with the person of the possessor noun, which always appears as the right-most element in the noun phrase, as in (357).

(357) Demonstrative + Noun + Possessor

Wa:má:' tachiwíni tu: wan nakwán u:'tzá'n tu:n ka:'xwili:ní:'ti wa:má:' i'xká:n sipéj.
 wa:ma:' tachiwín=i tu: wan na-i'k-wan u:'tzá'=n
 this story=JUNCT NREL say FUT-1SG.SUB-say PRN.3SG=JUNCT

tu:=n ka:'x-wilí:-ní:'t=i **wa:má:'** **i'x-xká:n** **sipéj**
 NREL=JUNCT prepared-put-PF=JUNCT this 3POSS-water mountain
 'This story that I'm going to say, it is what formed the mountain's water.'
 [Story of community: 2]

The numeral may precede a possessed noun within the noun phrase, as seen in (358).

(358) Numeral + Noun + Possessor

Li:ma'qachi'pa:xnálh laqatín i'xa'qán kí'wi'.
 li:-ma'qa-chi'pá:-x-nan-lh **laqa-tin** **i'x-a'qán** **kí'wi'**
 INST-hand-hold-CNN-AP-PFV NUM.CLF-one 3POSS-branch tree
 'He supported himself with a tree's branch.' [FAS: Frog story 27]

The numeral construction *laqatín* 'one' quantifies the possessee *i'xa'qán* 'its branch' in (358) and the possessor is inflectionally marked on the head (possessed) noun. In possessive constructions, the head noun exhibits agreement with the person of possessor and optionally for number of possessor, as is further discussed in §4.2.2.

4.2 Noun Inflection

This section presents nominal inflectional categories in ZT. Nouns in ZT do not take prototypical inflectional morphology in the sense that some of these categories are only optionally expressed. In general, nouns in ZT do not show much inflectional morphology

as they show no case, gender, or noun class agreement marking. The bare noun stem takes a “general number” reading, meaning that bare nouns are ambiguous between being understood as singular or plural outside of context. Nevertheless, nouns can take nominal inflections, such as number, definiteness, and possession marking. When nouns are marked for number, number marking is realized as a suffix, which has several allomorphs (see §4.2.1). Nouns are inflectionally marked for the person of possessor in possessive constructions, but optionally for the number of possessor (see §4.2.2). Nouns may also be marked for definiteness with the determinative (DTV) prefix *xa-* (see §4.2.3)

4.2.1 Number

As shown in §3.1, nouns in ZT exhibit atypical inflectional number marking as nouns are only optionally marked for plurality. The bare noun stem then does not express the number of entities involved, described as “general number” in Corbett (2000). In other words, outside of context, the bare noun stem can induce a singular or plural reading [e.g. *chichi'* ‘dog(s)’]. In context, the plural number of a bare noun is more commonly marked on the verb, as in (359).²²

(359) *Wa:’ tama:’ná chichi’ milá.*
 wa:’ ta–ma:’–nan **chichi’** milá
 this.here 3PL.SUB–lie–ST.PL **dog** yours
 ‘These dogs are yours.’

The noun *chichi’* ‘dog’ in (359) has a plural reading, but does not have an overt plural marker. Instead, the number of the noun is encoded on the verb with the third-person plural subject prefix, *ta-* (3PL.SUB) and the stative plural *-nan* (ST.PL).

Nouns can take an optional plural suffix when the number on the noun is expressed. When nouns are overtly marked for plurality, the nominal plural marker has several forms. The plural suffix *-n(V’)*, where *V’* is an unstressed laryngeal vowel, has a number of phonologically conditioned allomorphs as well as some forms that are seemingly in free variation, as described below. Another plural marker is the suffix *-ni:n*, which is found with a narrower set of nouns.

²² The ambiguity between a singular and plural reading of the noun outside of context is not indicated in the glosses in this thesis.

The most common plural suffix is $-n(V')$, where $-V'$ is an unstressed (partial) harmonic copy of the last vowel of the stem. The plural suffix $-n(V')$ has several allomorphs, surfacing as $-nV'$ with some noun stems that end in consonants. If the last vowel of the noun stem is a front vowel (/i/ or /e/), the plural suffix is realized as $-ni'$, as in (360). When the last vowel of the noun stem is a back vowel (/u/ or /o/), the plural marker is $-nu'$, as in (361) and when it is a central vowel (/a/), the plural marker surfaces as $-na'$, as shown in (362), where the plural markers have been highlighted in bold.

(360)	<i>a:siwí't</i>	‘guava’	>	<i>a:siwí'tni'</i>	‘guavas’
	<i>xkamaní:n</i>	‘orphan’	>	<i>xkamaní:ni'</i>	‘orphans’
	<i>tej</i>	‘road’	>	<i>téjni'</i>	‘roads’
(361)	<i>kwayúj</i>	‘horse’	>	<i>kwayújnu'</i>	‘horses’
	<i>tapú:n</i>	‘shawl’	>	<i>tapú:nu'</i>	‘shawls’
	<i>xoq</i>	‘shell’	>	<i>xóqnu'</i>	‘shells’
(362)	<i>chinkaláj</i>	‘mosquito (spp.)’ ²³	>	<i>chinkalájna'</i>	‘mosquitoes (spp.)’
	<i>tatzán</i>	‘tooth’	>	<i>tatzána'</i>	‘teeth’
	<i>kuxtán</i>	‘midge’	>	<i>kuxtána'</i>	‘midges’

For most vowel-final nominal stems, the plural marker occurs as $-n$, as in (363).

(363)	<i>tajná'</i>	‘turkey’	>	<i>tajná'n</i>	‘turkeys’
	<i>te:kú'</i>	‘boss’	>	<i>te:kú'n</i>	‘bosses’
	<i>xí:pa'</i>	‘plum’	>	<i>xí:pá'n</i>	‘plums’
	<i>tzá'qtza'</i>	‘corn cob’	>	<i>tza'qtzá'n</i>	‘corn cobs’
	<i>watzí:'ya'</i>	‘sand flea’	>	<i>watzi:'yá'n</i>	‘sand fleas’
	<i>pu:wí'ti'</i>	‘in-law’	>	<i>pu:wí'ti'n</i>	‘in-laws’

Additionally, a few nouns that are not vowel-final take irregular plural marking using the suffix $-n$. The nouns referring to humans in (364) are idiosyncratic in this way.

(364)	<i>tzu'ma'já:t</i>	‘girl’	>	<i>tzu'ma'já:n</i>	‘girls’
	<i>puská:t</i>	‘woman’	>	<i>puská:n</i>	‘women’

The examples show that in this case, the stem final consonant $-t$, which shares the same place of articulation as the plural, is replaced with the plural marker $-n$ that is normally found on vowel-final stems. Another human noun, *chi'xkú'* > *chi'xku'**wí'n*** ‘men’, also has

²³ The abbreviation (spp.) represents ‘several species’.

an irregular plural ending (c.f. with the noun presented above, *te:kú'* ‘boss’ > *te:kú'n* ‘bosses’).

The final plural marker is the suffix *-ni:n*, which is found with a different set of nouns that appears to be lexically determined. Nouns that take the plural suffix *-ni:n* may be *n*-final stems as in (365), vowel-final stems as in (366), or consonant-final stems as in (367), but do not take the more regular plural ending of *-n(V')*. These suffixes have been bolded in order to highlight the pattern described.

(365) <i>pa:n</i>	‘belly’	>	<i>pa:ni:n</i>	‘bellies’
<i>tojón</i>	‘foot’	>	<i>tojonni:n</i>	‘feet’
<i>a'kpú:n</i>	‘crown of head’	>	<i>a'kpu:ni:n</i>	‘crowns of heads’
<i>makxpá:n</i>	‘forearm’	>	<i>makxpa:ni:n</i>	‘forearms’
<i>pi'n</i>	‘chili’	>	<i>pi'ni:n</i>	‘chilies’
<i>talhpán</i>	‘rock’	>	<i>talhpanni:n</i>	‘rocks’
(366) <i>tlawa:ná'</i>	‘witch, healer’	>	<i>tlawa:na'ni:n</i>	‘witches, healers’
<i>laqapásni'</i>	‘relative’	>	<i>laqapasni'ni:n</i>	‘relatives’
<i>chú:'ni'</i>	‘vulture’	>	<i>chu:ni:n</i>	‘vultures’
(367) <i>xpulh</i>	‘plant (sp.)’	>	<i>xpulhni:n</i>	‘plants (sp.)’

The plural marker *-ni:n* (or *-i:n* with *n*-final stems) appears with some nouns in what seems like exceptional cases. This irregular plural marking has been described as appearing with nouns that refer to the parts of the body, humans, plants and animals, in other Totonacan languages, such as Upper Necaxa Totonac (Beck 2004: 6). In ZT, the plural marking on these nouns seems to be lexically-determined and only apply to a subset of nouns that fall into various semantic domains.

Additionally, some irregular plural forms appear in elicitation that are in seemingly free variation with the phonological allomorphs already described. These forms have so far only been found in formally elicited examples, but not in other more contextualized texts or narratives. One of these allomorphs is *-jnV'*, as in (368), which shows that the final nasal of the stem is elided.

(368) <i>li:chi:'kán</i>	‘woven belt’	>	<i>li:chi:'kána'</i> ~ <i>li:chi:'kájna'</i>	‘woven belts’
<i>laqastapú:n</i>	‘eye’	>	<i>laqastapú:nu'</i> ~ <i>laqastapú:jnu'</i>	‘eyes’
<i>maqxtampú:n</i>	‘palm (hand)’	>	<i>maqxtampú:nu'</i> ~ <i>maqxtampú:jnu'</i>	‘palms (hand)’

The nouns borrowed from Spanish in (369) also take the irregular plural form *-jnV'*.

(369) <i>xá:lu'</i>	‘jar (Sp. jarro)’	>	<i>xa:lú'jnu'</i>	‘jars’
<i>kompári</i>	‘godfather (Sp. compadre)’	>	<i>kompárijni'</i>	‘godfathers’
<i>kirisiá:nu'</i>	‘person (Sp. cristiano)’	>	<i>kirisia:nújnu'</i>	‘people’

Other noun stems take the plural marker *-(i)tnV'*, as in (370).

(370) <i>tzi:ya'</i>	‘mouse’	>	<i>tzi:yán ~ tzi:yátna'</i>	‘mice’
<i>che:qé:n</i>	‘thigh, leg’	>	<i>che:qe:ní:n ~ che:qe:nítni'</i>	‘thighs, legs’
<i>peqén</i>	‘arm, wing’	>	<i>peqení:n ~ peqenítni'</i>	‘arms, wings’

The *-(i)tnV'* plural form occurs with *n*-final and vowel-final stems and is in free variation with the plural suffix *-n(V')*, and the irregular suffix *-ni:n* seen in (365)-(367). From a comparative perspective, these *-jnV'* and *-(i)tnV'* plural suffixes are interesting since they are common in Misantla Totonac (MacKay 1999), which is somewhat of a linguistic outlier within the Totonac branch of the Totonacan (Totonac-Tepehua) family. While these forms are not found in contextualized examples, in elicitation speakers may give a variety of plural forms for the same noun (e.g. *makán* ‘hand’ > *makána'* ~ *makájna'* ~ *makaní:n* ‘hands’) and so plural marking is best analyzed in context. In general, the overt marking of plurality on nouns is optional and textually infrequent.

In sum, while the marking of number on a noun stem is optional, when the plurality of the noun is marked, it takes the plural suffix *-n(V')* which has a variety of allomorphs, as well as some forms which may be in free variation but these mostly appear in elicitation. In general, plural marking in ZT is variable, where some forms seem to be phonologically conditioned while others are lexically determined and relatively idiosyncratic.

4.2.2 Possession

The possessive construction in ZT is a head-marked construction (Nichols 1986), in which the possessed noun is inflectionally marked for the person of possessor and takes an (optional) suffix for the number of possessor, such as in (371)-(372).

(371) *Kaqaxpá'tni' kintzi:'ká'n!*

ka-qaxpá't-ni'-Ø **kin**-tzi:'-**ka'n**
 OPT-hear:2SG.SUB-DAT:2SG.SUB-PFV **1POSS**-mother-**PL.POSS**
 'Obey our mother!'

(372) *Ki:chi'panán i'xta:tá' kilakstín.*

ki:-chi'pá-nan-Ø i'x-ta:tá' **kin**-lakstín
 RT-catch-AP-IMPF 3POSS-father **1POSS**-children
 'The father of my children used to go fishing.' [RVA: Cuentos 19]

In (371), the noun is fully and explicitly marked for person and number of possessor with the prefix *kin-* (1POSS) and the suffix *-ka'n* (PL.POSS) on the possessed noun. In (372), however, the noun *i'xta:tá'* 'his father' does not take *-ka'n* (PL.POSS), but has a plural possessor reading, referring to the children's father. Since the marking of a plural possessor is optional, possessed nouns without the suffix *-ka'n* are ambiguous between a singular and plural possessor reading out of context; this information is not indicated in the glosses. The marking of possession is illustrated in Table 12.

Table 12: A full possessive paradigm for *chik* 'house'

Person	Singular	English gloss	Plural	English gloss
1	<i>kinchik</i>	'my house'	<i>kinchiká'n</i>	'our house'
2	<i>minchik</i>	'your house'	<i>minchiká'n</i>	'your (PL) house'
3	<i>i'xchik</i>	'its house'	<i>i'xchiká'n</i>	'their house'

Table 12 represents the possessive paradigm found on noun stems. The marking of possession is a combination of obligatory and optional affixes — the person of possessor being inflectionally marked with prefixes, and the number of possessor optionally marked with the suffix *-ka'n*.

The possessive prefixes have a number of allomorphs. The full form of the prefixes *kin-* and *min-* appear before vowels and before alveolar stops and affricates, as shown in (373)-(374). These possessive prefixes also undergo place assimilation preceding other non-continuants (see §2.1.1.4), as in (375)-(377). The possessive prefixes have been highlighted in bold and a phonetic transcription has been added to show the assimilatory process described.

(373) <i>mina'qxá:'q</i>	[mi n̩aʔ'ʃa:q]	'your head'
<i>kina'qxá:'q</i>	[ki n̩aʔ'ʃa:q]	'my head'
(374) <i>mintatu:nút</i>	[mi ntatu:'nut]	'your shoe'
<i>kinta:'tín</i>	[ki n̩t̩a:'tin]	'my brother'
<i>kinchík</i>	[ki n̩t̩ʃik]	'my house'
<i>minchík</i>	[mi n̩t̩ʃik]	'your house'
(375) <i>minkúk</i>	[mi n̩'kuk]	'your uncle'
<i>kinkompári</i>	[ki n̩kom'pari]	'my friend'
(376) <i>kinqá'lhni'</i>	[ki n̩'qałni]	'my blood'
<i>minqé:tzi'</i>	[mi n̩'qe:tsi]	'your bed'
(377) <i>kinpáqlhchu'</i>	[ki m̩'paqlchu]	'my tomato'
<i>minpésó</i>	[mi m̩'peso]	'your dollar'

The full form of the possessive prefixes [kin] and [min] are found on noun stems that begin with a vowel (373) and alveolar stops or affricates (374), and undergoes nasal assimilation with the following consonant, surfacing as [kiŋ, miŋ] in (375), [kiN, miN] in (376), and [kim, mim] in (377).

The first- and second-person prefixes are realized as *ki-* and *mi-* before sonorants, as in (378)-(379) and fricatives, as in (380).

(378) <i>kimákni'</i>	[ki 'makni]	'my body'
<i>mina:ná'</i>	[mi na:'na]	'your grandmother'
(379) <i>kilakstín</i>	[ki lak'stin]	'my children'
<i>mili:wá'</i>	[mi li:'wa]	'your food'
(380) <i>kisqá'ta'</i>	[ki 'sqata]	'my child'
<i>mistapú:n</i>	[mi sta'pu:n]	'your beans'

The final nasal of the prefixes undergoes elision when followed by noun stems that begin with a nasal, as in (378) the lateral approximant, as in (379) or a fricative, as in (380).

Moreover, the third-person possessive prefix *i'x-* is reduced to *i'-* when affixed to noun stems that begin with a fricative, as seen in (381)-(382). This prefix has been bolded in the orthographic line as well in order to highlight the form in discussion.

(381) *i'sqá'ta'*
i'x-sqá'ta'
 3POSS-child
 'her/his child'

(382) *i'xká:n*
i'x-xka:n
 3POSS-water
 'its water'

The possessive prefix *i'x-* can also be realized as *x-* in rapid speech, as in (383)-(385).

(383) *xlakstín*
i'x-lakstín
 3POSS-children
 'her/his children'

(384) *xa'kpú:n*
i'x-a'kpú:n
 3POSS-top
 'its top'

(385) *xqe:n*
i'x-qe:n
 3POSS-back
 'its back'

The third-person possessive prefix may also shift leftward and cliticize onto a preceding vowel-final word or particle, as in (386).

(386) *Mimpáx li:laqatu'tún kilhtamakúj a'mpá puská:t tama:wa:nán.*
 min-pa *i'x*-li:-laqa-tu'tún kilhtamakúj
 come-RPT:PFV 3POSS-INST-NUM.CLF-three day

a'n-pa puská:t tama:wá:-nan
 go-RPT:PFV woman buy-AP

'The third day came again and the woman went shopping again.' [FAS: Shopping list, 16]

This leftward shift of the third-person possessor prefix is discussed in §2.3.3.

When the possessed noun is plural, its number is optionally marked using the plural suffix. The plural suffix is attached to the nominal stem and precedes the plural possessive

suffix, such as (387)-(389). The examples show that the number of the person of possessor is marked separately from the number of the noun.

(387) *kinchikni'ká'n*
 kin–chik–**ni'**–ka'n
 1POSS–house–**PL**–PL.POSS
 ‘our houses’

(388) *minchikni'ká'n*
 min–chik–**ni'**–ka'n
 2POSS–house–**PL**–PL.POSS
 ‘your_{PL} houses’

(389) *i'xchikni'ká'n*
 i'x–chik–**ni'**–ka'n
 3POSS–house–**PL**–PL.POSS
 ‘their houses’

The suffix *-ka'n* in combination with nouns marked for plurality is textually infrequent in the corpus and occurs in texts in a manner similar to how it occurs in the excerpt in (390).

(390) *Tzey xmakni'n tamakxtá'kli' i'xamigos paláj chin taxtapali:lh i'xmakni'ká'n.*
 tzey **i'x–mákni'–n** ta–mak–xta'k–li'
 well **3POSS–body–PL** 3PL.SUB–body–grow–PFV

i'x–amigos paláj chin ta–xtapali:–lh **i'x–mákni'–ka'n**
 3POSS–friends quickly PTCL 3PL.SUB–change–PFV **3POSS–body–PL.POSS**
 ‘Their bodies spotted/changed color well; his friends quickly changed their bodies.’
 [RLP: Chameleon 13]

In the first clause in (390), the speaker marks the plurality of the noun *i'xmákni'n* ‘their bodies’ but does not mark the plurality of the possessor. In the second clause, the speaker marks the plural possessor, *i'xmakni'kán* ‘their bod(y/ies),’ but does not mark the number of the possessee noun itself. These forms without the plural nominal, or possessor, suffix are ambiguous out of context between a singular and plural reading (e.g. *i'xmákni'n* ‘its body/ its bodies/ their bodies’).

When an overt nominal possessor is present in the sentence, it follows the possessed noun, such as in (391)-(392).

(391) *Cha:'tín chi'xkú' wa'ká' xqé:n laqatín chik.*

cha:'-tín	chi'xkú'	wa'ká'	i'x-qe:n	laqa-tín	chik
NUM.CLF-one	man	be.high.up	3POSS-back	NUM.CLF-one	house

‘The man is on its roof of the house.’ [RLP: TRPS #34]

(392) *I'xa'kpú:n mé:sa wi: tasáj.*

i'x-akpú:n	mé:sa	wi:	tasáj
3POSS-head.crown	table	sit	cup

‘The cup is on its top of the table.’ [MCC: TRPS]

In (391), the possessed noun *i'xqé:n* ‘its back’ is followed by its possessor *laqatín chik* ‘one house’. Similarly, the head of the possessive construction in (392) is *i'xa'kpú:n* ‘its crown,’ and is followed by the possessor noun, *mé:sa* ‘table’. This order of the noun phrase supports the template proposed in (354) in §4.1. The structure of the noun phrase has been described as relatively fixed in all Totonacan languages with some variation. The marking of the person of possessor as well as the number of possessor being expressed with a combination of prefixes and (optional) suffixes is also a property the languages in the family share (Reid 1991, Kung 2007, McFarland 2012, Beck 2011, 2014 to name a few).

In summary, the marking of possession within the possessive phrase is obligatory, but only for the person of possessor which is realized as a prefix on the possessed (head) noun. These three possessor prefixes have several allomorphs that seem to be phonologically conditioned. The marking of the number of possessor, which is more morphologically stable, is optionally marked and is realized as a suffix. While it is textually unusual for the noun to be marked for number of possessee noun and number of possessor, if it is marked, the nominal plural marker precedes the plural possessor.

4.2.3 *Determinative*

The determinative (DTV) prefix, *xa-*, is found in several Totonacan languages and has been described as a prefix which combines with a noun to form a more specific referent (see Levy 2002c). The determinative has a variety of functions in discourse, some of which are also found with adjectives prefixed with *xa-* (DTV) as described in §3.3.1.2. In ZT, the determinative functions as a non-specific or generic possessive marker with nouns in attributive phrases and is used to identify a specific referent in discourse contexts.

The determinative prefix, *xa-* (DTV), signals a non-specific or generic possessor in noun-noun attributive constructions, where it attaches to the head noun, as shown in (394)-(393).

- (393) *xakini:t jú:ki'*
xa–*kiní:t* *jú:ki'*
 DTV–meat deer
 Lit. ‘its meat, (the) deer’
 ‘deer meat’

- (394) *xatachiwí:n wanqén*
xa–*ta*–*chiwí:–n* *wanqén*
 DTV–DCS–speak–DVB frog
 Lit. ‘its story, (the) frog’
 ‘the frog story’

- (395) *xaqó'xqa' misín*
xa–*qó'xqa'* *misín*
 DTV–skin animal
 Lit. ‘its skin, (the) animal’
 ‘animal skin, leather’

In (393), the noun bearing the determinative prefix signals a generic possessor, *xakini:t* ‘its meat’ and is accompanied by the generic noun, *jú:ki'* ‘deer’, which specifies the type of meat. The noun prefixed with the determinative *xatachiwí:n* ‘its story’ in (394) is used in combination with a generic noun, *wanqén* ‘frog’, to form a noun phrase with a more specific referent, meaning ‘the story about a frog’. Similarly in (395), *xa-* combines with a noun to denote a generic possessor or non-specific possessor, ‘an animal’s skin, leather’.

The determinative (DTV) prefix *xa-* may also show up on an adjective or noun in lexicalizations of anatomy, as in (396)-(397).

- (396) *xaqá'tla' maqlhspúlh*
xa–*qá'tla'* *maqlhspúlh*
 DTV–big finger
 Lit. ‘that big (one) finger’
 ‘thumb’

(397) *xapu:nán maqlhspúlh*
 xa-pu:nán maqlhspúlh
 DTV-middle finger
 Lit. ‘that middle (one) finger’
 ‘middle finger’

The determinative is used to signal that the relation between the two lexical items denotes a specific part of the body. The determinative prefixed to an adjective *xaqá'tla'* in (396) means something like ‘that big (one)’ and prefixed to a noun *xapu:nán* means ‘that middle (one)’ in (397). The *xa-* construction is followed by the head noun *maqlhspúlh* ‘finger’, which may be elided and the lexical item bearing the generic possessor prefix may stand alone as a pronominal element.

In the excerpt from the narrative in (398), the prefix *xa-* combines with nouns to encode an attributive relationship with another noun, *wanqén* ‘frog,’ previously mentioned in the narrative.

(398) *E:' laqtzilh i'xwanqén sqá'ta'. Tantu'tzá', cha:'tín xachi'xkú' e:' cha:'tín xapuská:t.*
 e:' laqtzín-lh i'x-wanqén sqá'ta' tan-tu'=tza'
 and see-PFV 3POSS-frog child NUM.CLF-two=now

cha:'-tín **xa-chi'xkú'** e:' cha:'-tín **xa-puská:t**
 NUM.CLF-one **DTV-man** and NUM.CLF-one **DTV-woman**
 ‘And the child saw his frog. (There was) now two of them, the one male and the one female (frog).’ [FAS: Frog story 37-38]

In (398), the child, *sqá'ta'*, who has been looking for his frog, finally finds it, only to discover that now there are two frogs, his male frog and its female partner. The determinative prefix *xa-* specifies that the nouns *chi'xkú'* ‘man’ and *puská:t* ‘woman’ refer to types of *wanqén* ‘frog,’ the male frog in one instance, and the female frog in the other.

In (399), the determinative (DTV) prefix *xa-* combines with nouns to signal that the referent of the noun phrase is recoverable from the discourse context.

(399) *Cha:'tintzá' xasqá'ta' le:'lh naxchik.*
 cha:'-tín=tzá' **xa-sqá'ta'** le:'n-lh nak=i'x-chik
 NUM.CLF:ANIMATE-one=now **DTV-child** take-PFV LOC=3POSS-house
 ‘That boy now took one (frog) to his house.’ [FAS: Frog story 44]

From an excerpt of the Frog Story, the boy discovers that his frog had children and the boy decides to take one of them home as his new frog. The determinative prefix signals that the noun *xasqá'ta'* ‘the child’ in (399) refers to the boy, and not one of the frog’s children.

The determinative prefix *xa-* is also found on adjectives and allows adjectives to stand alone as anaphoric heads of noun phrases (see §3.3.1.2). The determinative *xa-* resembles its Papantla cognate in function described in Levy (2002c) as well as the Upper Necaxa one described in Beck (2011a), where it is used to identify a referent in the discourse context and serves in reference tracking. Further data are needed to provide a comprehensive analysis of the functions of the determinative in ZT. A more detailed description of the distribution and functions of the determinative prefix *xa-* in the Totonacan languages may be found in Levy (2002c).

4.3 Noun Derivation

Zihuateutla Totonac has several processes that derive nouns from verbs and adjectives, and that form new nouns from nominal stems. Nouns are derived from verbal bases with the deverbal nominalizers (see §4.3.1) that come in three different suppletive allomorphs, *-n(i')*, *-(V)t*, and by a process involving a leftward shift in stress and the shortening and laryngealizing of the vowel-final stem, termed “prosodic apophony” following Beck (2004: 88). Nouns are also derived from verbal bases with the “agentive” suffix *-nV'* (see §4.3.2). The “place” prefix *ka:'-* (see §4.3.3) derives new nouns from nominal stems. Compounding is typically used to derive the names of plants and animal species as described in §4.3.5.

4.3.1 Deverbalizers on Nouns

Nouns in Zihuateutla are derived from verbal bases that denote a broad range of meanings that do not seem to correlate with fixed semantic categories. Three different derivational strategies are here grouped together as deverbal nominalizers, or simply deverbalizers (DVB). Two deverbal suffixes — namely, *-n(i')* and *-(V)t* — and a process of prosodic apophony behave like general deverbalizers, forming nouns from verbal bases.

Historically, these deverbal nominalizers were etymologically distinct but synchronically they seem to derive nouns from verbs of a similar semantic type. The occurrence of a particular deverbalizing strategy may be phonologically conditioned for some forms, but for the most part the choice of deverbalizer seems to be largely lexically specified. Deverbal nominalizers that have some phonologically conditioned allomorphs are described first below, followed by a discussion of some semantic types of nouns that this word-formation process creates.

The first deverbal suffix is *-n(i')*, which has several phonologically conditioned allomorphs. Consonant-final stems that take *-n(i')* select the full form of the deverbal suffix, as in (400)-(401), while most vowel-final stems take the reduced form of the deverbalizer, as in (402).

(400) *lónqni'*
 lonq-**ni'**
 be.cold-DVB
 Lit. '(the) cold (atmosphere)'
 'cold'

(401) *kú'ni'*
 ku'n-**ni'**
 swell-DVB
 Lit. '(the) swelled one'
 'caterpillar'

(402) *ni:n*
 ni:-**n**
 die-DVB
 Lit. '(the) dead one (person)'
 'corpse'

Some vowel-final stems, however, take the form *-ni'* more commonly found with consonant-final stems, as in (403).

(403) *chuyá:ni'*
 chuyá:-**ni'**
 be.crazy-DVB
 Lit. '(the) crazy one'
 'crazy (person)'

The occurrence of *-ni'* in (403) is a rare exception and is most likely lexically determined since most vowel-final nouns take *-n*. This deverbal nominalizer is cognate with the “general deverbalizing suffix” in other Totonacan languages (Huehuetla Tepehua: Kung 2007a, Upper Necaxa Totonac Beck 2011a). In UNT, the suffix seems to follow a similar phonological patterning (Beck 2011a: 40).

The second deverbal nominalizer found with some verbal bases is the suffix *-(V)t*, where *-V* is a stressed harmonic copy of the last vowel of the base. Thus, the deverbal suffix *-(V)t* has several phonologically conditioned allomorphs. Consonant-final bases with this deverbalizer take the full form of the suffix *-Vt*, as in (404)-(406).

(404) *laqxta'ját*
laqxta'j-at
 cry-DVB
 Lit. ‘that which is cried’
 ‘tears’

(405) *chojót*
choj-ot
 spit-DVB
 Lit. ‘that which is spat’
 ‘saliva, spit’

(406) *ta:'skujút*
ta:'-skuj-ut
 CMT-work-DVB
 Lit. ‘that which is done with someone’
 ‘job’

Consonant-final stems, as in (404)-(406), show that the vowel of the suffix is in complete harmony with the height and backness of the last vowel of the base. There are no examples in the corpus with the deverbal suffix *-Vt* on consonant-final stems with a final front vowel.

The deverbalizer *-Vt* surfaces as *-t* with vowel-final stems, as in (407)-(408).

(407) *pupút*
pupú-t
 boil-DVB
 Lit. ‘that which was boiled’
 ‘foam’

(408) *cha:lát*
 cha:lá-**t**
 render-DVB
 Lit. ‘(the) rendered grease’
 ‘fat’

With *n*-final stems, the final nasal is elided, and the base takes the reduced form of the deverbalizer *-t*, as in (409). The deverbal suffix has been bolded in the orthographic line in order to highlight the form involved in the derivation.

(409) *pa'tla:'nát*
 pa'tla:'nán-**t**
 vomit-DVB
 Lit. ‘that which is vomited’
 ‘vomit’

This deverbal nominalizer is cognate with the “resultative nominalizer” in UNT, which seems to follow a similar phonological pattern (Beck 2011a: 41). While this nominalizer also forms resultative nouns in ZT, as we will see below, it may also form nouns of different semantic types.

The third process used to derive nouns from verbs is termed prosodic apophony, which involves a leftward shift in stress and the shortening and laryngealizing of the final vowel in the stem, as in (410)-(411).

(410) <i>tamá:</i>	>	<i>táma'</i>
ta-ma:		táma'
INCH-lie.down		lie.down:DVB
‘lie down’		Lit. ‘thing to lie down’
		‘bed’

(411) <i>ka:'taní:</i>	>	<i>ka:'táni'</i>
ka:'taní:		ka:'táni'
celebrate		celebrate:DVB
‘celebrate’		‘celebration’

As can be observed in the examples in (410)-(411), the deverbalizer shifts the stress to the penult syllable of verbal bases that take word-final stress and shortens and laryngealizes the last vowel of the stem. This process is regular for all vowel-final stems, but with *n*-final stems, prosodic apophony elides the final nasal of the stem, as in (412).

(412) <i>li:tzo'qnún</i>	>	<i>li:tzó'qnu'</i>
li:-tzo'q- nun		li:-tzo'q- nu'
INST-write- AP		INST-write- AP:DVB
'be written with (it)'		Lit. 'the thing (it) is written with'
		'pen, pencil'

The instrumental form of the verb stem, *li:tzo'q-* 'A writes X with Y' in (412) is inflected for the anti-passive with the suffix *-nun* which conveys a reading similar to 'A writes with Y'. As in the previous examples, nominalizing the verb stem involves a leftward shift in stress and a final laryngeal vowel but loses the stem-final *-n* in the derivation. Deverbal nouns formed from an apophonic pattern of stress shift are also found in other Totonacan languages (Upper Necaxa Totonac: Beck 2011a, Filomeno Mata Totonac: McFarland 2009:100). Beck (2011a:42) describes the prosodic apophony as a "reflex" of a historical final glottal stop suffix used to form nouns and adjectives from verbs.

While the deverbalizer takes different forms, some of which are phonologically conditioned, these allomorphs do not correlate with fixed semantic categories, indicating that the choice of deverbal nominalizer is largely lexical. The meanings that deverbalized nouns denote are broad and have been classified into different semantic groups. These semantic categories include nouns expressing the result or effect of the state, action, or process involved in the meaning of the base verb; the object, instrument, or place associated with the event conveyed by the base verb; and the person or entity involved in the meaning of the base verb. The collected data indicate that a variety of deverbal forms may be used to derive nouns of a similar semantic type and that the choice of deverbal strategy may be best characterized as largely lexically determined.

Deverbalizers create nouns that express the result of the state, action, or event denoted by the verbal base. These examples resemble what Quirk et al. (1985:749-750) refers to as a 'resultant' or 'effected object' since the object is an effect of the state or event denoted by the verb, as seen in (413)-(415).

(413) <i>lónqni'</i>
lonq- ni'
be.cold- DVB
Lit. '(the) cold (atmosphere)'
'cold (weather)'

(414) *ta:'skujút*
ta:'-skuj-**ut**
CMT-work-DVB
Lit. 'work done with someone'
'job'

(415) *ka:'táni'*
ka:'táni'
celebrate:DVB
'celebration'

In (413), the base verb *lonq-* 'X is cold' is nominalized with *-ni'* to form a noun that encodes the state (of the atmosphere). The deverbal nouns derived from *ta:'skuj-* 'A works along with X' in (414) and *ka:'táni:* 'X celebrates/has a party' (derived by *ka:'táni:* 'to celebrate') in (415) indicates the action or event designated by the base. All three deverbalizers form nouns that reify the state, action, or event conveyed by the verb.

The deverbalizers also form nouns that denote a substance that is the product of the action described by the verbal base, as in (416)-(419).

(416) *chojót*
choj-ot
spit-DVB
Lit. 'that which is spat'
'saliva'

(417) *cha:lát*
cha:lá-t
render-DVB
Lit. 'rendered grease'
'fat'

(418) *sqaqa:ná't*
sqaqa:ná'n-t
sweat-DVB
Lit. 'that which is sweated'
'sweat'

(419) *jíni'*
jin-**ni'**
smoke-DVB
Lit. 'it smokes'
'smoke'

The base, *choj-* ‘X spits’, is nominalized with *-Vt* to form a noun that functions as the default projectile of the action ‘spit, saliva’ in (416). The deverbal noun derived from *cha:lá* ‘X renders grease or fat during cooking’ in (417) denotes the substance, ‘fat, grease,’ that is the result of the process of the base. Similarly, in (418)-(419), the deverbal nouns derived from *sqaqa:nán* ‘X sweats’ and *jin* ‘X smokes, steams’ express the substances that are the product of the process of the base verb. While the deverbal strategy that forms nouns denoting substances is most common with the suffix *-(V)t*, (419) demonstrates that nouns denoting substances are also derived with *-n(V)*.

These two deverbalizers, *-n(i')* and *-(V)t*, also form nouns that convey the sensation that is associated with, or arises from, the state or event denoted by the base, as in (420)-(421).

(420) *pi'kxnít*
 pi'kxnín-t
 itch_V-DVB
 Lit. ‘it itches’
 ‘itch’

(421) *tasku'li'n*
 ta-sku'li'-n
 DCS-tickle-DVB
 Lit. ‘it tickles’
 ‘tickle’

The intransitive base, *pi'kxnín* ‘X feels itchiness’, is nominalized with *-(V)t*, and expresses the resulting sensation, ‘itch,’ in (420). The verbal base, *sku'li'* ‘A tickles X’, (derived with the decausative *ta-*), similarly, takes the deverbal nominalizer *-n(i')* to form a noun denoting the sensation involved in the event in (421).

The deverbalizers also derive nouns that denote a person, as seen in (422)-(426).

(422) *ni:n*
 ni:-n
 die-DVB
 Lit. ‘(the) dead one (person)’
 ‘corpse’

- (423) *qó'tni'*
 qo't-**ni'**
 drink.alcohol-DVB
 Lit. '(the) drunk one (person)'
 'drunk (person)'
- (424) *maqachuyá:ni'*
 maqa-chuyá:-**ni'**
 STM-be.crazy-DVB
 Lit. '(the) one that makes one crazy (person)'
 'liar, cheater'
- (425) *i:'tzá'ka'*
 i:'tzá'ka'
 be.sick:DVB
 Lit. '(the) sick one (person)'
 'sick (person)'
- (426) *qó:'qo'*
 qó:'qo'
 be.mute:DVB
 Lit. '(the) mute one (person)'
 'mute (person)'

The verbal bases are nominalized with *-n(V)'* in (422)-(424), and by prosodic apophony in (425)-(426). The derivation may form a noun that refers to a person that is the result of or experiences the state or event in (422)-(423), or undergoes the process conveyed by the verbal base in (425)-(426). In (424), the base verb *maqachuyá:* 'X causes Y to feel crazy' is nominalized to convey the person who causes the state but more specifically, it idiosyncratically refers to a 'liar, cheater'.

Some deverbal nouns are based on the decausative form of transitive stems. In these derivations, the derived noun indicates the entity that is the result of, or the object involved in, the action expressed by the decausative verbal base, as in (427)-(430).

- (427) *taskuwi:n*
 ta-skuwí:-n
 DCS-curse-DVB
 Lit. 'that which is cursed'
 'sin, curse'

(428) *tapixtlí:n*
ta-pix-tli:-n
DCS-neck-dance-DVB
Lit. 'that which made the neck dance'
'song'

(429) *takúxtu'*
ta-kúxtu'
DCS-weed:DVB
Lit. 'that which was weeded'
'cultivated land'

(430) *takú'ka'*
ta-kú'ka'
DCS-carry:DVB
Lit. 'that which was loaded'
'load, cargo'

The nouns in (427)-(430) are derived with a deverbaler from forms that have the decausative prefix *ta-*, which creates intransitive verbs from transitive bases, and emphasizes the object of the underived verb (see §6.1.3). The deverbaler forms a noun that denotes the participant or object that is the result or affected participant of the action denoted by the decausative base. The nominalization requires the prefix *ta-* since the decausative removes the expression of the agentive subject, indicating that a non-agentive subject, or the object of the underived base, is affected as a result of the action. In (429)-(430), the derived noun denotes the object of the transitive verbal base. The decausative bases of these nouns are unattested (i.e. *#takuxtú:* and *#takuká:* where the # signifies the lexical item is unattested), suggesting that the combination of the prefix and deverbaler is a construction and lexically conditioned.

Nouns derived by prosodic apophony also indicate the most salient object associated with the action, or used in the action, denoted by the verbal base, as in (431)-(432).

(431) *táma'*
ta-ma'
INCH-lie:DVB
Lit. 'that which is to lie down'
'bed, place to sleep'

- (432) *qé:tzi'*
 qe:tzi'
 put.on.back:DVB
 Lit. 'that which cushions the back'
 'cushion, pad'

These forms do not take the decausative prefix. The intransitive verb *tamá:* 'A lies down' (derived with the inchoative *ta-* and the stative posture verb *ma:* 'X lies') is nominalized by a prosodic apophony, deriving a noun that names the location at which the action takes place, or by prototypical extension, a bed, or place to lie down as in (431). Similarly in (432), the deverbal noun *qé:tzi'* 'object to cushion one's back' expresses the object that is typically associated with this posture, *qe:tzín* 'A puts X on one's back to act like a cushion'.

Deverbalizers are also found in nominal derivations referring to items of clothing, as in (433)-(436).

- (433) *tatu:nú:t*
 ta-tu:-nu:-t
 INCH-foot-on-DVB
 Lit. 'that which is put on the foot'
 'shoe'
- (434) *taqe:nú:t*
 ta-qe:-nu:-t
 INCH-body-on-DVB
 Lit. 'that which is put on the body'
 'shirt'
- (435) *tapixnu'*
 ta-pix-nu'
 INCH-neck-on:DVB
 Lit. 'that which is put on the neck'
 'necklace'
- (436) *tá'qnu'*
 ta-a'q-nu'
 INCH-head-on:DVB
 Lit. 'that which is put on the head'
 'hat'

(437) *taqojnú:t*
ta-qoq-nu:-**t**
INCH-head-on-DVB
 Lit. ‘that which is put on the head’
 ‘hat, helmet’

The deverbal nouns in (433)-(436) are formed from verb stems with the inchoative prefix *ta-*, which has the effect of forming dynamic verbs from stative bases (see §5.3 and §6.1.3). The nominal derivation in (433)-(436) form nouns that refer to the object of the verbal base (e.g. *tatu:nú:* ‘X puts Y on one’s foot’ > *tatu:nú:t* ‘shoe’), which in these examples are articles of clothing. These nouns are derived with the deverbal nominalizer *-(V)t* and by prosodic apophony. The choice between the body-part root *a’q-* ‘head’ in (436) and *qoq-* ‘head’ in (437) to lexicalize terms for ‘hat’ or ‘helmet’ further shows that the nominalized stems are lexically determined.

Deverbal nouns derived from inchoative forms of verbal bases also encodes the emotion that is associated with, or arises from, the state or event denoted by the base, as in (438)-(439).

(438) *tajikwát*
ta-jikwán-**t**
INCH-be.afraid-DVB
 Lit. ‘that which becomes feared’
 ‘fear’

(439) *tali:puwát*
ta-li:puwán-**t**
INCH-sad-DVB
 Lit. ‘that which becomes sad’
 ‘sadness’

The example in (438), for instance, is derived from the base verb *jikwan* ‘be afraid,’ and in (439) from the verb stem *li:puwán* ‘be sad,’ in addition to the inchoative prefix *ta-*; the deverbal suffix *-(V)t* forms a noun conveying the emotion involved in the state or event.

Some deverbal nouns are based on the instrumental form of verbs, and refer to the INSTRUMENT or tool used to perform an action, as in (440)-(447).

- (440) *li:sí'tni'*
li:–sí't–ni'
INST–cut–AP:DVB
 Lit. '(the) thing that cuts'
 'scissors'
- (441) *li:slantán*
li:–slantá–n
INST–glue–DVB
 Lit. '(the) thing used to glue'
 'glue'
- (442) *li:qalhtawáka'*
li:–qalhtawáka'
INST–read:DVB
 Lit. '(the) thing used for reading'
 'reading material'
- (443) *li:kú'chu'*
li:–kúchu'
INST–cure:DVB
 Lit. '(the) thing used for curing'
 'remedy'
- (444) *li:wá't*
li:–wa'–t
INST–eat–DVB
 Lit. '(the) thing that is eaten'
 'food'
- (445) *li:cha'nát*
li:–cha'n–at
INST–plant–DVB
 Lit. '(the) thing used for growing crops'
 'seeds (for crops)'
- (446) *le:'kxki't*
li:–a'k–xki't–t
INST–head–brush–DVB
 Lit. '(the) thing used for brushing one's head'
 'comb, brush'

- (447) *li:skuját*
li:-skuj-at
INST-work-DVB
Lit. ‘(the) thing used for working (on land)’
‘tool (for working on land)’

The instrumental applicative prefix *li:-* introduces an oblique object expressing an INSTRUMENT that participates in the meaning of the base verb (see §6.1.2.2). The suffix *-at* is idiosyncratic in (447) since it does not undergo vowel harmony with the base *li:skuj-* ‘A works with X’.

The combining form *pu:-* ‘vagina, container’, which is etymologically related to the body-part root ‘vagina’, is used together with a deverbalizer to derive nouns that denote containers or container-like instruments or the place used in the activity, as in (448)-(451).

- (448) *pu:tánti'*
pu:-tánti'
vagina-defecate:DVB
Lit. ‘container used to defecate’
‘toilet’
- (449) *pu:qó'tnu'*
pu:-qó't-nu'
vagina-drink-AP:DVB
Lit. ‘container used for drinking’
‘drinking container’
- (450) *pu:chi'pán*
pu:-chi'pá-n
vagina-trap-DVB
Lit. ‘container used for fishing’
‘fish net’
- (451) *pu:tza'pán*
pu:-tza'pá-n
vagina-sew-DVB
Lit. ‘thing used for sewing’
‘sewing machine’

In (448)-(451), *pu:-* ‘vagina, container’ does not seem to be used in deriving word forms without the deverbalizer also being present; these derivations are unattested in the ZT database, (i.e. #*pu:qo'tnún* and #*pu:tantín*, where # represents an unattested form),

suggesting that *pu:-* plus suffix combination is necessary for the nominal derivation and is lexically conditioned. The combining form *pu:-* ‘container’ and its etymologically related body-part noun *pu:n* ‘vagina, inside’ was also presented in §3.3.3.

Some deverbal nouns based on *pu:-* ‘vagina, container, place’ designate places or locations in which the event encoded by the verbal base occurs, as in (452)-(455).

(452) *pu:páxni'*

pu:-pax-ni'

vagina–bathe–DVB

Lit. ‘place used for bathing’

‘bathroom’

(453) *pu:ská'tni'*

pu:-ska't-ni'

vagina–learn–DVB

Lit. ‘place for learning’

‘school’

(454) *pu:ku'chú:n*

pu:-ku'chú:-n

vagina–cure–DVB

Lit. ‘place for curing’

‘medical clinic’

(455) *pu:chiwí:n*

pu:-chiwí:-n

vagina–speak–DVB

Lit. ‘place for speaking’

‘townhall’

Deverbal nouns with *pu:-* ‘vagina, container, place’ also refer to the object used for transport or conveyance in (456)-(457).

(456) *pu:takútnu'*

pu:-takútnu'

vagina–cross:AP:DVB

Lit. ‘place for crossing’

‘bridge’

(457) *pu:túka'*
pu:–tuká'
vagina–go.up:DVB
Lit. 'place/thing for going up'
'ladder'

In (456), the verbal base *pu:takút-* 'A crosses the river in X' is deverbalized by prosodic apophony expressing the object of the base verb used to cross a river. The base verb #*pu:tuká* in (457) is unattested in the ZT database.

The deverbalizers may also derive nouns that have idiosyncratic and highly metaphorical or metonymic meanings, as in (458)-(462).

(458) *kú'ni'*
ku'n–ní'
swell–DVB
Lit '(the) swelled one'
'caterpillar'

(459) *tachá'ni'*
ta–cha'n–ní'
DCS–plant_v–DVB
Lit. 'that which is planted'
'crop, chayote'

(460) *tatzó'qni'*
ta–tzo'q–ní'
DCS–write–DVB
Lit. 'that which is written'
'homework'

(461) *chojót*
choj–ot
spit–DVB
Lit. 'that which spits'
'lung'

(462) *latamá:t*
la–tamá:–t
be–lie.down–DVB
Lit. 'that which lives'
'life'

Some of these nominalized stems resemble what Snoek and Rice (2019) refer to as a PROCESS FOR PRODUCT metonymy, where the entire process denoted by the verbal base stands for a salient sub-part of the process or event participant; this semantic extension is commonly followed by what Rice (2012) refers to as a GENERIC FOR SPECIFIC metonymy, i.e. *kúni'* 'swell' > 'swelled one' > 'caterpillar', *tachá'ni'* 'that which is planted' > 'plant, crop' > 'chayote', and *tatzó'qni'* 'be written' > 'that which is written' > 'homework'. The nominal derivations in (458)-(462) form nouns that encode more specific entities that participate in or are similar to the action denoted by the verbal base (e.g. *ku'n* 'X swells' > *kú'ni'* 'caterpillar'). In (462), the verbal base is a compound noun *latamá:* which idiosyncratically forms a verb meaning 'A lives' that is nominalized to form an abstract noun meaning 'life'.

4.3.2 Agentive

The agentive nominalizing suffix derives nouns from dynamic verbal bases that express the AGENT of an action. The agentive nominalizer is *-nV'*, where *V'* is a stressed harmonic copy of the last vowel in the stem (463)-(470). This agentive nominalizer differs in form from the general deverbal nominalizer *-ni'* which is not stressed and does not harmonize with the last vowel of the stem.

(463) *ku'chu:nú'*
ku'chu:-nú'
 cure-AGT
 Lit. '(the) one who cures'
 'doctor'

(464) *ma:ska'ti:ni'*
ma:-ska't-ni:-ní'
 CS-learn-CS-AGT
 Lit. '(the) one who causes one to learn'
 'teacher'

- (465) *tzo'qnú'*
 tzo'q–**nú'**
 write–AGT
 Lit. '(the) one who writes'
 'writer'
- (466) *qa'lha:ná'*
 qa'lha:n–**ná'**
 steal–AGT
 Lit. '(the) one who steals'
 'thief'
- (467) *laqxqaná'*
 laq–xqa–**ná'**
 INTNS–split–AGT
 Lit. '(the) one who splits (wood)'
 'woodchopper'
- (468) *cha'ná'*
 cha'n–**ná'**
 plant–AGT
 Lit. '(the) one who plants'
 'gardener'
- (469) *chi'paná'*
 chi'pa–**ná'**
 catch.fish–AGT
 Lit. '(the) one who catches fish'
 'fisher'
- (470) *tza'paná'*
 tza'pa–**ná'**
 sew–AGT
 Lit. '(the) one who sews'
 'tailor'

The agentive suffix is one of the few stress-attracting affixes in ZT, creating nouns that end in a stressed light syllable (see §2.2.1).

4.3.3 Place

The place prefix *ka:'-* combines with the plural forms of nouns to denote places or locations where there is an abundance of something, as in (471)-(474).

- (471) *ka:'seqétni'*
ka:'–seqét–**ni'**
 PLC–grass–PL
 ‘pastureland’
- (472) *ka:'ti'yá'tna'*
ka:'–ti'yá't–**na'**
 PLC–soil–PL
 ‘ground, land’
- (473) *ka:'lakchikni'*
ka:'–lak–chik–**ni'**
 PLC–INTNS–house–PL
 ‘town, village’
- (474) *ka:'lo:qé:'n*
ka:'–lo:qé:'–**n**
 PLC–elephant.ear–PL
 ‘La Unión’

The form in (474) refers to the town of La Union, which is derived with the place prefix *ka:'*- and the plural form of the noun *lo:qé:'* denoting a type of plant, specifically “Elephant Ears” (*Xanthosoma robustum* Schott).

The place prefix is also used with deverbal nouns, as in (475).

- (475) *ka:'takúxtu'*
ka:'–ta–kúxtu'
 PLC–DCS–weed:DVB
 ‘field, cornfield’

The derivation in (475) does not take the plural suffix. The deverbal noun *takúxtu'* ‘cultivated land’ does not have a plural form and, hence, does not appear with the plural marker in the derivation with *ka:'*-; this is also the case in UNT (Beck 2011a: 594). However, note that other deverbal nouns formed by prosodic apophony do have plural forms (i.e. *tachá'ni'* ‘chayote’ > *tacha'ni'n* ‘chayotes’).

The place prefix may also combine with words from lexical classes other than nouns, as in (476)-(478).

(476) *ka:'ká'kswa'*
ka:'–ká'kswa'
 PLC–quiet
 ‘calm place’

(477) *ka:'qewí'wi'*
ka:'–qewí'wi'
 PLC–cold
 ‘cold place’

(478) *ka:'ka'tzán*
ka:'–ka'tzán
 PLC–feel.pain
 ‘dangerous place’

The prefix *ka:'-* combines with the adjectival stem *kákswa'* ‘quiet’ in (476) and *qewíwi'* ‘cold’ in (477) to refer to a location that has the properties described by the adjectival base. In (478), the place prefix combines with the verb stem *ka'tzán* ‘X feels pain’ to refer to a place that has the potential to cause pain (i.e. a place that is dangerous).

Unlike other nouns, derivations with the place prefix *ka:'-* may function like locative adverbs, as in (479).

(479) *I'xtaá'n taskúja. I'xtaá'n ka:'takúxtu'.*
 i'x–ta–a'n ta–skuj–a i'x–ta–a'n **ka:'–ta–kúxtú'**
 PST–3PL.SUB–go 3PL.SUB–work–IMPF PST–3PL.SUB–go **PLC–DCS–weed:DVB**
 ‘They used to go to work; they used to go to the cornfields.’ [RVA: Cuentos 10]

The intransitive verb *a'n* ‘A goes’ takes the locative noun *ka:'takúxtu'* ‘countryside, fields,’ which modifies the verb by specifying the place where the participants work in (479). Some lexical items that are derived with *ka:'-* are only used as adverbs (e.g. *ka:'kwini'* ‘during the day’ *ka:'-* (PLC) + *kwini'* ‘late morning’).

4.3.4 Derived Nouns with Body-part Terms

Body-part terms (BPTs) can be used to form new nouns from nominal bases. BPTs are bound roots that require a paronymic suffix *-n(i')* in order to function as an independent stem as discussed in §3.3.3. Without the paronymic suffix *-n(i')*, body-part terms are bound roots that can incorporate with noun stems (and other lexical classes) to form more specific

nouns or to form new nouns in compositional and idiosyncratic ways. BPTs, for example, incorporate with other nouns denoting parts of the body to form a term for a more specific part of the body. The examples in (480)-(484) shows the independent noun *qó'xqa* 'skin' combines with different BPTs, suggesting that this derivational process is productive.

(480) *maqaqó'xqa'*
maqa–*qó'xqa'*
hand–skin
 'skin of the hand'

(481) *tanto:qó'xqa'*
tantu:–*qó'xqa'*
foot–skin
 'skin of the foot'

(482) *cha:'qó'xqa'*
cha:'–*qó'xqa'*
shin–skin
 'skin of the shin'

(483) *pa:qó'xqa'*
pa:–*qó'xqa'*
belly–skin
 'skin of the belly'

(484) *laqape:qó'xqa'*
laqa–pi:–*qó'xqa'*
face–chest–skin
 'skin of the cheek'

The examples in (480)-(484) involve a variety of body-part roots combining with the noun *qó'xqa* 'skin'. The root specifies the part of the whole that is denoted by the nominal base, (e.g. *maqa*- 'hand' *qó'xqa* 'skin' > 'the skin of the hand'). In (484), the combination of *laqa*- 'face' and *pi:-* 'chest' create an idiosyncratic form meaning 'cheek' (cf. *lakapí:n* 'cheek'), which combines with the base *qó'xqa* to derive the term for 'skin of the cheek.'

Body-part terms also combine with other nominal stems in highly figurative derivations, as in (485)-(490).

- (485) *a'qalo'qót*
a'qa–lo'qót
ear–bone
 ‘horn’
- (486) *pa:lú:wa'*
pa:–lú:wa'
belly–snake
 ‘intestines’
- (487) *ta:pa:chá:'xtu'*
ta:pa:–chá:'xtu'
side–basket
 ‘ribcage’
- (488) *laqastapún*
laqa–stapún
face–bean
 ‘eye’
- (489) *lakasikwalán*
laka–sikwalán
face–god
 ‘pupil of the eye’
- (490) *kinkase:láj*
kinka–se:láj
nose–wax
 ‘snot’

Examples (485)-(490) show that body-part roots combine with nouns in a number of metaphorical or idiosyncratic ways to lexicalize terms for more specific objects or parts of the body. These lexical items are also reflective of an areal feature shared by Mesoamerican languages through loan translations, as observed in Brown and Witkowski (1981), where it seems to be common that, for example, the word for ‘eye’ is semantically associated with the bean of the face.

The class of body-part terms combine with other body-part roots to form more morphologically complex constructions. This process commonly progresses by combining general body-part morphemes to create a more specific body-part noun described by Rice (2012) as a GENERIC FOR SPECIFIC metonymy. These complex nouns have been lexicalized in ways that are also highly figurative and idiosyncratic, as in (491)-(495).

- (491) *tu:píxni'*
tu:–pix–ni'
foot–neck–PRT
 ‘ankle’
- (492) *lakapí:n*
laka–pi:–n
face–chest–PRT
 ‘cheek’
- (493) *makatu:píxni'*
maka–tu:–pix–ni'
hand–foot–neck–PRT
 ‘wrist’
- (494) *kilhtampá:n*
kilh–tan–pa:–n
mouth–buttocks–belly–PRT
 ‘lip’
- (495) *laqaxtampú:n*
laqa–x–tan–pu:–n
face–CNN–buttocks–vagina–PRT
 ‘sole of the foot’

The complex noun in (491) is formed by combining *tu:-* ‘foot’ with the noun *píxni'* ‘neck’; the literal meaning of the form is ‘the neck of the foot,’ which is used as a metaphor for ‘ankle’. The construction *lakapí:n* in (492) is derived from *laka-* ‘face’ and the base *pi:n* ‘chest’, which together literally mean the ‘chest, or flat thick extension of the mouth,’ and is used to express ‘cheek’. The example in (493) is formed by combining *maka-* ‘hand’ with *tu:píxni'* ‘ankle,’ cf. (491), to refer to ‘wrist’. In (494), *kilhtampá:n* ‘lip’ is derived by combining *kilh-* ‘mouth’ with *tampá:n* ‘edge’, which is etymologically derived from *tan-* ‘buttocks, posterior’ and *pa:n* ‘belly’. In (495), *laqa-* ‘face’ combines with the stem *tampú:n* ‘bottom,’ which is etymologically derived from *tan-* ‘buttocks, posterior’ and *pu:n* ‘vagina, interior’. *laqa-* ‘face’ refers to the flat planar surface of the foot, and *tampú:n* designates a bottom region, which together derive *laqaxtampú:n* ‘sole of the foot’; the complex stem takes an intervening element *-x-* glossed as connective (CNN).

4.3.5 Compound Nouns

Nominal compounds are formed by combining two independent stems to form a new noun. These compound nouns differ from those formed from BPTs presented above in §4.3.4 in that compound nouns involve combining independent nominal stems as opposed to combining bound roots. Noun compounds in ZT seem to be commonly used for lexicalizing the names of plant and animal species, as in (496)-(497).

(496) *seqetkapén*
seqét–kapén
grass–coffee
'plant (sp.)'

(497) *sipejspú:n*
sipéj–spu:n
mountain–bird
'Great Curassow'

The examples in (496)-(497) demonstrate that compound nouns have a single primary stress on the ultimate syllable of the nouns ending in a closed syllable, following the regular stress patterns as described in §2.2.1. In (496), the right-hand member of the compound *kapén* 'coffee plant' combines with the noun *seqét* 'grass' to lexicalize a term for an unidentified type of long grass that can be boiled and used to make a tea. In (497), the right-hand member of the compound *spu:n* 'bird' combines with the noun *sipéj* 'mountain' to lexicalize the term for a bird species, 'Great Curassow (*Crax rubra*)'.

When the left-hand member of a nominal compound ends in a vowel, that vowel is lengthened (and the laryngealization may be maintained or lost), as in (498)-(499).

(498) *lhtu'ku:'xa'ná:t*
lhtú'ku'–xa'ná:t
spine–flower
'Mexican Prickly Poppy'

(499) *ju:ki:lú:wa'*
jú:ki'–lú:wa'
deer–snake
'boa constrictor'

The last vowel of the left-hand member of the compound, *lhtú'ku'* ‘spine’, in (498) is lengthened and the compound takes a single lexical stress, forming the nominal compound *lhtu'ku:'xa'ná:t* ‘Mexican Prickly Poppy (*Argemone Mexicana*).’ In (499), the last vowel of the left-hand member, *jú:ki'* ‘deer,’ is lengthened and loses its laryngealization. The compound noun, *ju:ki:lú:wa'* ‘boa constrictor’ (literally, deer–snake), is a semantic calque found in several languages of the Mesoamerican linguistic area (Smith-Stark 1982).

Nominal compounds can also form a noun expressing a part of the body, as in (500).

- (500) *xwa:'ti:'tatzán*
xwá:'ti'–tatzán
 grind.stone–tooth
 ‘molar’

The right-hand member of the compound *tatzán* ‘tooth’ combines with *xwá:'ti'* ‘grinding stone’ to lexicalize a body-part term, *xwa:'ti:'tatzán* ‘molar.’ The final vowel of the left-hand member of the compound is lengthened, but does not lose the laryngealization in (500).

Additionally, the left-hand member of the nominal compound can be a verb, as in (501).

- (501) *kwini:li:pálhna'*
kwini–li:pálhna'
 be.morning–broom
 ‘plant (sp.)’

The noun *li:pálhna* ‘broom’ [derived from *li:-* (INST) *palh-* ‘sweep’ *-ná'* (AGT)] combines with the verb *kwini* ‘be morning’ in (501) to lexicalize the name of an unidentified plant species, which is used to make brooms for sweeping.

Finally, the left-hand member of the nominal compound can also be an adjective, as in (502), or an adverb, as in (503).

- (502) *lutaqe:li:pálhna'*
lutaqe–li:pálhna'
 slippery–broom
 ‘plant (sp.)’

(503) *ka:na:li:pálhna'*
ka:ná:-li:pálhna'
true-broom
'plant (sp.)'

The noun *li:pálhna* 'broom' [(derived from *li:-* (INST) *palh-* 'sweep' *-ná'* (AGT))] combines with the adjective *lutáqe* 'slippery' in (502), and with the adverb *ka:ná:* 'true, real' in (503) to lexicalize a term for a plant species. Compound nouns formed by combining two independent nominal stems seem to be more common than nominal compounds formed with adjectives and adverbs.

To summarize Chapter 4, ZT nouns are uninflected for case, gender, or noun class, and have what Corbett (2000) describes as “general number” — that is, the noun is unspecified as to the number of entities it denotes and can therefore have a singular or plural reading outside of context. Nouns can, however, be optionally marked for plurality. When the noun is overtly marked for plural number, the plural suffix has a variety of allomorphs, which can be said to be lexically conditioned. In possessive constructions, nouns show agreement for person of possessor and are optionally marked for number of possessor. Within the noun phrase, in general, nominal modifiers appear before the noun while the expression of a nominal possessor always appears after the possessed noun if overtly expressed. Nouns may also take a determinative prefix that is found in attributive constructions to signal a more specific referent, or in discourse contexts to recover the identity of a specific participant.

Three derivational processes, deverbal nominalization, agentive nominalization, and place nominalization form new nouns from either verbs, adjectives, or other noun stems. The deverbalizers form nouns from verbs with a diverse range of nominal senses and therefore the system seems to be largely lexically specified. An agentive suffix forms nouns from verbs to denote the AGENT of an action. A place prefix derives nouns from verbs, adjectives, or other nouns that denote places or locations, which can also be used as a locative complement in the verbal predicate. Finally, compounding is another process that involves combining two lexical stems to form a new noun, primarily nouns denoting plants and animals. While in general nouns are relatively simple, the next two chapters focus on the inflectional and derivational morphology of the verb, which is quite complex.

5 Verb Inflection

The present chapter focuses on the polysynthetic, agglutinating inflectional morphology of the verb in Zihuateutla Totonac. ZT verbs show a layering of affixes that are used for inflection and derivation. Verb inflection includes categories for person and number, tense, mood, aspect, and voice. Inflection in ZT is complex as it can be marked by affixes, stress and laryngeal vowels, suppletion, or zero marking. In general, the inflectional potential that is applied to verbs appears on the periphery of the verb word, with the root situated in the middle. Voice constructs show distinct grammatical agreement properties and voice markers seem to appear between inflectional and derivational categories as discussed in §5.4. Derivational affixes are found closer to the root and include a number of valency-changing affixes, adverbial modifiers, and body-part roots which are incorporated into the verb. These more complex, derived verbs show the same inflectional possibilities as those described in this chapter, although verb derivation will be dealt with in detail in Chapter 6.

ZT has no non-finite verb forms. All verbs in ZT may show agreement for person and number and for one of three tenses: past, present, and future. An important distinction is made in this chapter between two major classes of verbs: dynamic and stative. This division is a formal morphological distinction and not a semantically based one. Dynamic verbs represent a large open class of verbs that show the full range of aspectual inflectional possibilities — that is, the imperfective, perfective, progressive, and the (morphological) perfect. The (morphological) perfect is being analyzed as an aspect following traditional Totonacan linguistic practice. Stative verbs, on the other hand, constitute a smaller closed class of verbs that do not distinguish aspectual inflection, unless derived into dynamic stems. All verbs potentially make a grammatical distinction for one of four moods: the indicative mood and three irrealis moods — the optative, potential, and the mood formally described as the “irrealis”, following Totonacan tradition. While these categories all interact in ways that are beyond the scope of this dissertation, they will be addressed separately and described in more detail in this chapter.

The order of person and number, aspect, tense, and mood affixes can be found in the template in Figure 7. This linear order is not meant to imply that inflection and derivation are always neatly distinguishable categories. Additionally, using a templatic structure to

model the verb in Totonac has complications as some categories are marked by processes other than affixation, such as fusion, stem suppletion, or by being unmarked. A more detailed template is presented in the section on voice (see §5.4), and when verb derivation is discussed in Chapter 6.

Tense/Mood	Person	Mood	Person		Derivation	Root	Derivation	Aspect	Inflection	Person	Aspect
PST	1SUB	POT	PL.OBJ	3PL.SUB				Derivation	Root	Derivation	IMPF
FUT	1OBJ				PROG	2SG.SUB					
OPT					PF	2PL.SUB 2OBJ					

Figure 7: Order of inflectional affixes in relation to the verb root

Figure 7 shows that person-marking is accomplished by a combination of prefixes and suffixes. There is no representation for third-person singular subjects or objects in the template since these are not overtly marked on the verb. Second-person singular subjects are also not represented in this verb template since these are marked by stress, laryngealization, and suppletion. Aspect is marked by a set of suffixes while tense is marked by prefixes, the present tense being the unmarked form. Mood is also marked by prefixes with the exception of the mood formally described as the “irrealis,” which is expressed by a combination of tense, mood, and aspectual affixes described in §5.2.3.4. This template further shows a slot for a grammatical affix described as a stative plural marker (ST.PL), which is found on stative verbs and dynamic verb forms in the progressive aspect with plural subjects.

This chapter begins with a description of participant marking for subjects in §5.1.1, objects in §5.1.2 and double object constructions in §5.1.3, which exhibit some inflectional idiosyncrasies and ambiguity in the expression of person and number in transitive verbs. The morphological patterns of the two major subclasses of verbs, dynamic and stative, are presented separately. The aspectual inflections for dynamic verbs are the imperfective (see §5.2.1.1), perfective (see §5.2.1.2), progressive (see §5.2.1.3), and (morphological) perfect

(see §5.2.1.4), and are divided into three phonologically-driven subclasses evident in their conjugational patterns in the imperfective and perfective paradigms. Stative verbs, on the other hand, do not inflect for aspect unless they have undergone derivation to become dynamic forms of verbs, in which case they take the same aspectual inflections as dynamic verbs; the inflectional patterns of stative verbs are discussed in §5.3. Dynamic and stative verbs share the same inflection for tense, as described in §5.2.2, and mood, as described in §5.2.3.

This chapter further includes the inflectional patterns of categories that mark voice-like alternations or have valency-reducing properties that alter the diathesis of the verb. In Totonacan studies, these are referred to as the indefinite subject and reflexive, the indefinite object or antipassive, and the reciprocal. These categories take distinct agreement patterns and are therefore treated separately in §5.4. The indefinite subject marker targets the subject of the clause and is also used in reflexives, as described in §5.4.1. The indefinite object marker or the antipassive targets the object of the clause, as shown in §5.4.2. The reciprocal morpheme marks relationships of reciprocity in verb forms with plural subjects and is described in §5.4.3.

5.1 Participant Marking

This section describes the marking of grammatical relations via verb agreement in ZT. Verb agreement is marked on the verb stem using a system of prefixes and suffixes for the person and number of subject and object following a nominative-accusative pattern. Third person singular subjects and objects are not marked overtly on the verb; instead they are the default readings when there is no overt person or number morphology, which is typically represented by linguists with a zero morpheme. Second-person singular subjects may be variably marked in some verb stems.

Verbs may agree with up to two objects. Agreement for a second object uses the same agreement markers for direct objects; however, overt agreement is rare and is only seen when both objects are speech act participants or non-third-person (cf. §5.1.3). Stative verbs use the same system of person and number marking as dynamic verbs, although they

require the presence of the stative plural marker *-nan* in those verb stems with plural subjects (cf. §5.3.2). The order of person and number marking on the verb stem follows the pattern shown in Figure 7 above. For descriptive purposes, in this section, subjects and objects that are marked by the absence of any overt morphology are illustrated with a zero affix in the position where or nearest to where other person or number affixes would appear.

5.1.1 Subject

Subject markers in ZT make a distinction for person and number with the affixes illustrated in Table 13. The set of morphological markers in Table 13 for person and number of the subject are used for verbs of all valencies and classes. The person affixes are fairly regular and easy to distinguish, although they contain overt and covert marking, as well as a mix of zero, prefixal, suffixal, and circumfixal forms.

Table 13: Subject markers

Person and number	ZT Affix(es)
1SG	<i>i'k-</i>
2SG	-
3SG	∅
1PL_{INCL}	<i>-uj</i>
1PL_{EXCL}	<i>i'k- -uj</i>
2PL	<i>-tit</i>
3PL	<i>ta-</i>

The system of person-marking shown in Table 13 makes an inclusive/exclusive distinction on first-person plural subjects with the suffix *-uj* for the inclusive, and the combination of the first-person singular prefix and first-person plural suffix *i'k--uj* for the exclusive. Second-person plural subjects are regularly marked with the suffix *-tit*. There is no affix for second-person singular subject, represented with a dash in Table 13, as there are various means of expressing second-person agreement depending on the conjugation class and aspect of the verb (see Table 15 and Table 16). In general, second-person singular subjects

are marked via penultimate stress and a short final laryngeal vowel, but also via irregular suppletive forms. Third-person singular subjects are marked by the absence of an overt marker, represented with a zero-affix, and third-person plural subjects are expressed with the prefix *ta-*.

Table 14 illustrates the subject markers in the four aspectual paradigms for the Class 1 (vowel-final) verb stem *ma:ska:ki:* ‘dry something out’.²⁴ The verb is formed with the causative circumfix *ma:- -i:* added to the verb root *ska:k* ‘dry out’ increasing the valency by one. The table highlights (in bold) the marking of person and number of the subject, which is regular for all persons with the exception of second-person subjects. In each example, the subject is acting on a third-person singular object marked by the absence of person or number morphology on the verb stem.

Table 14: Subject markers on the Class 1 verb *ma:ska:ki:* ‘dry out’ across the four aspectual categories

	Imperfective	Perfective	Perfect	Progressive
1SG	<i>i'kma:ska:ki:</i>	<i>i'kma:ska:ki:lh</i>	<i>i'kma:ska:ki:ni:'t</i>	<i>i'kma:ska:ki:ma:'</i>
2SG	<i>ma:ska:ki:ya'</i>	<i>ma:ská:ki'</i>	<i>ma:ska:ki:ni:'ta'</i>	<i>ma:ska:ki:pa:'t</i>
3SG	<i>ma:ska:ki:</i>	<i>ma:ska:ki:lh</i>	<i>ma:ska:ki:ni:'t</i>	<i>ma:ska:ki:ma:'</i>
1PL.EXC	<i>i'kma:ska:ki:yá:uj</i>	<i>i'kma:ska:ki:uj</i>	<i>i'kma:ska:ki:ni:'táuj</i>	<i>i'kma:ska:ki:ma:'náuj</i>
1PL.INC	<i>ma:ska:ki:yá:uj</i>	<i>ma:ska:ki:uj</i>	<i>ma:ska:ki:ni:'táuj</i>	<i>ma:ska:ki:ma:'náuj</i>
2PL	<i>ma:ska:ki:ya:'tít</i>	<i>ma:ska:ki:tít</i>	<i>ma:ska:ki:ni:'tantít</i>	<i>ma:ska:ki:pa:'nantít</i>
3PL	<i>tama:ska:ki:</i>	<i>tama:ska:ki:lh</i>	<i>tama:ska:ki:ni:'t</i>	<i>tama:ska:ki:ma:'nán</i>

Table 14 demonstrates that subject marking is consistent for all aspectual paradigms except the second-person singular subject forms. Second-person subjects are marked with penultimate stress and a short final laryngeal vowel for Class 1 stems, except for the progressive aspect, where it is marked suppletively with a portmanteau suffix *-pa:'t*, which combines PROG and 2SG.SUB. The variation in second-person singular subjects is further

²⁴ Dynamic verbs in ZT can be divided into three classes based on the inflectional patterns in the imperfective and perfective paradigms (see §5.2.1). These sub-classes are phonologically motivated dividing the conjugation patterns of imperfective and perfective verbs into Class 1 (vowel-final stems), Class 2 (consonant-final stems), and Class 3 (*n*-final stems).

described below. The unmarked stem takes a third-person singular subject (and object) as the default reading. In this section on subject marking, third-person subjects are introduced first since these show the most regular patterns. First-person subjects are introduced next as these participant markers show some variability and allomorphic variation. Finally, second-person subjects are presented last because these forms are both variable and irregular.

Third-person subjects

Third-person singular subjects are indexed by the absence of any overt morphology on the verb stem, indicated by the zero affix in the intransitive stem *taxtú* ‘leave’ in (504). Third-person plural subjects are marked with the prefix *ta-* as in (505). The zero affix in (504) is placed in the same position where a third-person plural prefix would appear.

(504) *Taxtú*.
Ø–*taxtú*
3SG.SUB–leave
‘S/he leaves’

(505) *Tataxtú*.
ta–*taxtú*
3PL.SUB–leave
‘They leave’

First-person subjects

The first-person singular subject prefix *i'k-* has several allomorphs. The prefix may be phonologically weakened to *i'j-* /*ix*/ as in (506) or reduced to *j-* /*x*/ as in (507) when combining with consonant-initial verb stems; this weakening or reduction has also been bolded in the orthographic line.²⁵

(506) ***I'jka:laqtzín***.
i'k–*ka:–laqtzín*
1SG.SUB–PL.OBJ–see
‘I see them’

²⁵ In (506)-(511), first-person singular forms are bolded in the orthographic representation to highlight the morphological pattern being described.

- (507) *Jqalhaski'ni.*
i'k-qalha-ski'n-ni
 1SG.SUB-mouth-ask-DAT
 'I ask her for it.'

The prefix can also be reduced to /k/ before approximants and vowels, as in (508)-(509).

- (508) *Kwa...*
i'k-wa
 1SG.SUB-say
 'I say...' [RVA: Cuentos 80]

- (509) *Ka'ná nakintaskujút.*
i'k-a'n-a nak=kin-taskujút
 1SG.SUB-go-IMPF LOC=1POSS-job
 'I'm going to work.'

In rapid speech, the first-person singular prefix *i'k*- may shift leftward onto the preceding word or particle, becoming an enclitic, when the verb stem is consonant-initial, as in (510)-(511).

- (510) *Wa'chí' kití'k puwán. Wa'chí' kití'k pastáka.*
 wa'chí' kit=*i'k* puwán-Ø
 like.this PRN.1SG=1SG.SUB think-IMPF
- wa'chí' kit=*i'k* Ø-pasták-a
 like.this PRN.1SG=1SG.SUB 3OBJ-remember-IMPF
 'That's how I think; that's how I remember it.' [RVA: Cuentos 95]

- (511) *Kakima:xkilh dios chi:'k puwán.*
 ka-kin-ma:xkí-lh dios chi:'=k puwán
 OPT-1OBJ-give-PFV god PTCL=1SG.SUB think
 'May God give me understanding.' [RVA: Cuentos 99]

In (510), the prefix is affixed to the leftward consonant-final element, and in (511), the prefix attaches to a vowel-final particle; this property of affix-shifting onto the leftward element is also discussed in §2.3.3.

First-person plural subjects are realized with the morphemes (*i'k*-) *-uj*. The first-person plural subject suffix *-uj* marks an inclusive subject (512), while the combination of the first-person singular subject prefix *i'k*- and first-person plural suffix *-uj* marks an exclusive subject (513).

(512) *Natlawayá:uj qá'tla' makskút.*

na-tlawá-ya:-**uj** qá'tla' makskút
 FUT-make-IMPF-**1PL.SUB** big fire
 'We_{INC} are going to make a big fire.' [FAS: Woodchopper 7]

(513) *Chi: xi'kwilanáuj a'jnanú' lakapá:ni xi'kwilaná:uj.*

chi: i'x-**i'k-wilá-nan-uj** a'jnanú' lakapá:n=i
 PTCL PST-**1SG.SUB-sit-ST.PL-1PL.SUB** there hillside=JUNCT

i'x-**i'k-wilá-nan-uj**
 PST-**1SG.SUB-sit-ST.PL-1PL.SUB**

'That's where we_{EXC} lived, over there; we_{EXC} lived on the hillside.' [SLO: Cuentos 24]

In line 7 in (512) from the Woodchopper, a short story about a man who goes out to chop wood to make a fire for his wife, the speaker uses inclusive subject inflection with the first-person plural suffix *-uj* to include the subject of the direct speech (the woodchopper) and the ADDRESSEE (his wife). In the personal narrative in (513), the speaker excludes the ADDRESSEES by using the exclusive subject marked with the circumfix *i'k--uj* to refer to himself and the family members he used to live with on the hillside.

Second-person subjects

Second-person plural subjects are described here before second-person singular because these are regularly and consistently marked with the suffix *-tit*, as in (514).

(514) *Ka:laka:'yi:'tit xa'ná:t.*

ka:-laká:'-ya:-**tit** xa'ná:t
 PL.OBJ-chop-IMPF-**2PL.SUB** flower
 'You all chop the flowers.'

Second-person singular subject marking, by contrast, depends on the conjugation class and aspect of the particular verb. Aspectual inflections for dynamic verbs in ZT can be divided into three classes based on the patterns in the imperfective and perfective paradigms (cf. §5.2.1). These sub-classes, which are phonologically motivated, are divided into: Class 1 (vowel-final stems), Class 2 (consonant-final stems), and Class 3 (*n*-final stems), where *n* represents an alveolar nasal consonant. Verb inflection for second-person singular subjects is illustrated in Table 15 for the Class 1 (vowel-final) verb stem *taxtú* 'leave', the Class 2

(consonant-final) bound verb root *tuks-* ‘hit’, and the Class 3 (*n*-final) verb stem *laqtzín* ‘see’.

Table 15: Second-person singular subject forms for Class 1, 2, and 3 verbs *taxtú* ‘leave’, *tuks-* ‘hit’, and *laqtzín* ‘see’

	Imperfective	Perfective	Perfect	Progressive
Class 1 <i>taxtú</i> ‘leave’	<i>taxtúya'</i>	<i>táxtu'</i>	<i>taxtuni:'ta'</i>	<i>taxtupá:'t</i>
Class 2 <i>tuks-</i> ‘hit’	<i>túksa'</i>	<i>túksti'</i>	<i>tuksni:'ta'</i>	<i>tukspá:'t</i>
Class 3 <i>laqtzín</i> ‘see’	<i>laqtzína'</i>	<i>láqtzi'</i>	<i>laqtzini:'ta'</i>	<i>laqtzimpá:'t</i>

Table 15 demonstrates that second-person singular subjects are marked differently for Class 1, 2, and 3 verbs. In general, all forms take penultimate stress and a final short laryngealized vowel with the exception of the progressive aspect where the second-person singular subject is marked with the suppletive suffix *-pa:'t* (marked in bold), which is further described below.

Second-person singular subjects for Class 1, 2, and 3 verbs in the imperfective aspect take a short laryngealized vowel of the imperfective suffix, which is being analyzed as a portmanteau *-(y)a'* (IMPF:2SG.SUB), as in (515)-(517). The full form of the imperfective marker appears as *-ya:*, which has several allomorphs (cf. §5.2.1.1).

(515) *Taxtúya'*.
taxtú-ya'
 leave-**IMPF:2SG.SUB**
 ‘You leave.’

(516) *Tú'ksa'*.
tu'ks-a'
 hit-**IMPF:2SG.SUB**
 ‘You hit it.’

(517) *La'qtzína'*
la'qtzín-a'
see-IMP:2SG.SUB
'You see it.'

In (515)-(517), the second-person singular subjects are being analyzed as a portmanteau of the imperfective aspect and person-marking realized by a final unstressed short laryngealized vowel.

In the perfective aspect of Class 1 verb stems, the second-person singular is marked by penultimate stress and a final short laryngealized vowel (cf. the unmarked form *taxtú* 'leave'), as in (518). For Class 1 verbs in the perfective aspect, the perfective aspect in second person forms is marked by the absence of overt morphology (see §5.2.1.2), which is analyzed synthetically in (518).

(518) *Táxtu'*
táxtu'
leave:2SG.SUB:PFV
'You left.'

For Class 2 (consonant-final) verb stems in the perfective aspect, the second-person singular subject is marked by the suffix *-ti'*, which may historically come from the second-person subject suffix *-t* and the perfective *-li'*, as in (519).

(519) *Tú'ksti'*
tu'ks-ti'
hit-2SG.SUB:PFV
'You hit it.'

In the perfective aspect, Class 3 (*n*-final) verb stems exhibit penultimate stress and a final short laryngealized vowel with the loss of the stem final /n/ (cf. the unmarked form *laqtzín* 'see something'), as seen in (520).

(520) *Láqtzi'*
láqtzi'
see:2SG.SUB:PFV
'You saw it.'

In the perfect paradigm, second-person singular subjects are realized as *-ní:ta'* — a portmanteau of person-marking and the perfect suffix for all verb classes, as in (521)-(523).

(521) *Taxtuní:'ta'*
taxtú-**ni:'ta'**
leave-PF:2SG.SUB
'You had left.'

(522) *Tu'ksní:'ta'*
tu'ks-**ni:'ta'**
hit-PF:2SG.SUB
'You have hit it.'

(523) *La'qtzíní:'ta'*
la'qtzín-**ni:'ta'**
see-PF:2SG.SUB
'You had seen it.'

In the progressive aspect, the second-person singular subject requires the suppletive form of the progressive marker *-ma:'* which is replaced with *-pa:'*. The suffix encodes the second-person singular subject with *-t*, which is analyzed as a portmanteau, as in (524)-(526).

(524) *Taxtupá:'t*
taxtú-**pa:'t**
leave-PROG:2SG.SUB
'You are leaving.'

(525) *Tu'kspá:'t*
tu'ks-**pa:'t**
hit-PROG:2SG.SUB
'You are hitting it'

(526) *La'qtzimpá:t.*
 la'qtzín-**pa:t**
 see-PROG:2SG.SUB
 'You are seeing it'

Note that the second-person plural subject of the progressive also requires the suppletive form of the progressive marker *-pa:'*, but is still regularly marked for a plural subject with *-tit* as in (527).

(527) *Ma:ska:ki:pa:'nantít.*
 ma:-ska:k-ni:-**pa:'-nan-tit**
 CS-dry.out-CS-PROG:2SUB-ST.PL-2PL.SUB
 'You all dry it out.'

The Class 1 verb *ma:ska:ki:* 'dry something out', which was shown in Table 14, illustrates that the progressive aspect with second-person subjects (singular and plural) takes the suppletive suffix *-pa:'* instead of the progressive aspectual marker *-ma:'*, which is grammaticalized from the stative posture verb *ma:'* 'lie'. It is important to note that the conjugation pattern of the posture verb *ma:'* 'X lies' shows stem suppletion with second-person singular and plural subject forms as well; the posture verb *ma:'* is replaced with *pa:'* and takes the suffix *-t* (2SG.SUB) or *-tit* (2PL.SUB), as described in §5.3.2.

Finally, there are some verbs that take irregular forms with second-person subjects. All verbs derived from *a'n* 'go', *min* 'come', and *ma:* 'lie' have suppletive second-person forms in the various aspects. The paradigms for these verbs for all four aspects are found in Table 16. The table shows that the same pattern for marking second person subjects holds for the suppletive forms of the verb *tamá:'* 'lie down', which is replaced with *tapá:'*, the verb *a'n* 'go,' which is replaced with *pin*, the verb *min* 'come', which is replaced with *tan*, and the verb stem *li:min* 'bring something' (derived with the instrumental prefix *li:-* and the verb *min* 'come'), which is replaced with *li:tán*.²⁶ Since the suffix *-tit* is consistently marked in all second-person plural subject forms, it has been highlighted in bold.

²⁶ Other verbs that have suppletive stems include *cha:n* 'arrive there' which may have historically been derived from *a'n* 'go' and is realized as *chipín*, and *chin* 'arrive here' historically from *min* 'come' is replaced with *chitán*.

Table 16: Second-person singular suppletive subject forms for *tamá:'* 'lie down', *a'n* 'go', *min* 'come', and *li:mín* 'bring something'

	Verb stem	Imperfective	Perfective	Perfect	Progressive
2SG	<i>tamá:'</i>	<i>tapá:'ya'</i>	<i>tápa'</i>	<i>tapa:'ní:'ta'</i>	<i>tapa:'pá:'t</i>
2PL	'lie down'	<i>tapa:'ya:'tít</i>	<i>tapa:'tít</i>	<i>tapa:'ni:'tantít</i>	<i>tapa:'pa:'nantít</i>
2SG	<i>a'n</i> 'go'	<i>pína'</i>	<i>pí't</i>	<i>pini:'ta'</i>	<i>pimpá:'t</i>
2PL		<i>pina:'tít</i>	<i>pintít</i>	<i>pini:'ta:ntít</i>	<i>pimpa:'nantít</i>
2SG	<i>min</i> 'come'	<i>tána'</i>	<i>ta't</i>	<i>tani:'ta'</i>	<i>tampá:'t</i>
2PL		<i>tana:'tít</i>	<i>tantít</i>	<i>tani:'tantít</i>	<i>tampa:'nantít</i>
2SG	<i>li:mín</i>	<i>li:tána'</i>	<i>lí:ta'</i>	<i>li:tani:'ta'</i>	<i>li:tampá:'t</i>
2PL	'bring sth'	<i>li:tana:'tít</i>	<i>li:tantít</i>	<i>li:tani:'tantít</i>	<i>li:tampa:'nantít</i>

Table 16 exemplifies a few verbs that are marked by suppletive stems with second-person subjects. These forms are still marked with *-tit* (2PL.SUB) suffixed to the suppletive stem for plural forms, and show a pattern of penultimate stress and a laryngeal final short vowel for second-person singular forms. These verbs, for example, include *tamá:'* 'lie down', which is replaced with *tapá:'* for all aspects, as in (528)-(531).

(528) *Tapá:'ya'*
tapá:'-ya'
 lie.down:2SUB-IMPF:2SG.SUB
 'You lie down.'

(529) *Tápa'*
tápa'
 lie.down:2SG.SUB:PFV
 'You lied down.'

(530) *Tapa:'ní:'ta'*
tapá:'-ní:'ta'
 lie.down:2SUB-PF:2SG.SUB
 'You have lain down.'

(531) *Tapa:'pa:'t.*
 tapá:'-pa:'t
 lie.down:2SUB-PROG:2SG.SUB
 'You are lying down.'

The verb forms in Table 16 also demonstrate how progressive verb forms with plural subjects require the stative plural morpheme *-nan*, as shown in (532).

(532) *Tapa:'pa:'nantít.*
 tapá:'-pa:'-**nan**-tit
 lie.down:2SUB-PROG:2SUB-**ST.PL**-2PL.SUB
 'You all are lying down.'

The use of the stative plural *-nan* is seen with all verb stems with plural subjects in the progressive aspect, as discussed in §5.2.1.3, and with plural subjects in the stative posture verb paradigms, as described in §5.3.2.

5.1.2 Object

Unlike subjects, objects mark person and number with separate morphemes. The object agreement affixes for person and number are illustrated in Table 17. There is no inclusive/exclusive distinction in the marking of objects.

Table 17: Object markers for all verb classes

Person		Number	
1OBJ	<i>kin-</i>		
2OBJ	<i>-ni'</i>	PL.OBJ	<i>ka:-</i>
3OBJ	∅		

Table 17 demonstrates that object markers expressing person make no distinction for number and that the number of plural objects is marked with a separate morpheme *ka:-* (PL.OBJ). The person-marking patterns for objects described in Table 17 apply to all aspectual paradigms and verb classes.

The third-person object is the default reading of the transitive verb marked by the absence of overt morphology, represented here with a zero morpheme. Third-person plural objects are marked with the plural object marker *ka:-* on the unmarked form of the verb, as seen in (533)-(534). The zero affix in (533) is placed where other object prefixes would appear (cf. first-person object prefix in (537)-(542) below).

(533) *I'ktúksa.*

i'k-~~Ø~~-tuks-a
 1SG.SUB-**3OBJ**-hit-IMPF
 'I hit it.'

(534) *I'ka:túksa.*

i'k-~~Ø~~-**ka:-**-tuks-a
 1SG.SUB-**3OBJ-PL.OBJ**-hit-IMPF
 'I hit them.'

The second-person object marker is the suffix *-ni'* as in (535), and second-person plural objects are marked with the addition of the plural object marker *ka:-*, as seen in (536).

(535) *I'ktuksá:ni'.*

i'k-tuks-a:-**ni'**
 1SG.SUB-hit-IMPF-**2OBJ**
 'I hit you.'

(536) *I'ka:tuksá:ni'.*

i'k-**ka:-**-tuks-a:-**ni'**
 1SG.SUB-**PL.OBJ**-hit-IMPF-**2OBJ**
 'I hit you all.'

A first-person object is marked with the prefix *kin-*, which exhibits place assimilation with a following stop, affricate, or nasal, as in (537)-(538). The assimilation is evident on the orthographic line where it has been highlighted in bold.

(537) ***K**intatúksa.*

kin-ta-tuks-a
 1OBJ-3PL.SUB-hit-IMPF
 'They hit me.'

- (538) *Kimpa:tu'ksli'*
kin-Ø-pa:-tu'ks-li'
1OBJ-3SG.SUB-belly-hit-PFV
 'S/he hit me in the stomach.'

The first-person object prefix is *ki-* before fricatives and approximants, as in the bolded parts in (539)-(541).

- (539) *Xiwá:n pó'qtu' kiski'ni chauj*.
 xiwá:n pó'qtu' **kin-Ø**-ski'n-ni-Ø chauj
 Juan always **1OBJ-3SG.SUB**-ask-DAT-IMPF tortilla
 'Juan always asks me for tortillas.'

- (540) *Kilaqtzilh*.
kin-Ø-laqtzín-lh
1OBJ-3SG.SUB-see-PFV
 'S/he saw me.'

- (541) *Wa'chi' xkiwani kina:ná' i'xna:ná'*.
 wa'chi' i'x-**kin-Ø**-wan-ni-Ø kin-na:ná'
 like.that PST-**1OBJ-3SG.SUB**-say-DAT-IMPF 1POSS-grandmother

 i'x-na:ná'
 3POSS -grandmother
 'Like that is how my grandmother, her grandmother, used to tell me.'
 [RVA: Cuentos 1]

First-person plural objects are marked with a combination of the first-person object prefix *kin-*, the plural object prefix *ka:-* and the second-person object suffix *-ni'* as in (542).

- (542) *Kinka:tuksá:ni'*.
kin-ka:-Ø-tuks-a:-**ni'**
1OBJ-PL.OBJ-3SG.SUB-hit-IMPF-**2OBJ**
 'S/he hit us.'

Notice the form in (542) is rather iconic in that the expression of a first person plural object "us" is expressed with the plural object prefix *ka:-*, the prefix *kin-* "me" and the suffix *-ni'* "you", so that "us" is expressed analytically as the combination of "me" plus "you". Beck (2003: 9) suggests this iconicity is illustrative of the additive nature of Totonacan morphology so that as "meanings grow more complex, additional morphemes are used to add successive layers of meaning", although this observation does not hold for all forms.

This iconicity in first-person plural object marking is common in most Totonacan languages (Papantla Totonac: Levy 1990; Misantla Totonac: MacKay 1999; Sierra: Troiani 2007; Upper Necaxa Totonac: Beck 2011; Pisaflores Tepehua: MacKay & Trechsel 2015).

Table 18 illustrates the paradigm of person and number agreement markers for transitive verbs with the bound verb root *tuks-* ‘hit’ in the imperfective aspect. The object markers in the table have been highlighted in bold; the dash (-) in the table represent illicit forms.

Table 18: Object marking (in bold) for the verb *tu'ks-* ‘hit’

	SUBJECT	1SG.OBJ	2SG.OBJ	3SG.OBJ
SINGULAR OBJECTS	1SG	-	<i>i'ktuksá:ni'</i>	<i>i'ktúksa</i>
	2SG	<i>kintúksa'</i>	-	<i>túksa'</i>
	3SG	<i>kintúksa</i>	<i>tuksá:ni'</i>	<i>túksa</i>
	1PL.EXC	-	<i>i'ka:tuksá:ni'</i>	<i>i'ktuksá:uj</i>
	1PL.INC	-	-	<i>tuksá:uj</i>
	2PL	<i>kila:tuksá:uj</i>	-	<i>tuksa:'tít</i>
	3PL	<i>kintatúksa</i>	<i>tatuksá:ni'</i>	<i>tatúksa</i>
	SUBJECT	1PL.OBJ	2PL.OBJ	3PL.OBJ
PLURAL OBJECTS	1SG	-	<i>i'ka:tuksá:ni'</i>	<i>i'ka:túksa</i>
	2SG	<i>kila:tuksá:uj</i>	-	<i>ka:túksa'</i>
	3SG	<i>kinka:tuksá:ni'</i>	<i>ka:tuksá:ni'</i>	<i>ka:túksa</i>
	1PL.EXC	-	<i>i'ka:tuksá:ni'</i>	<i>i'ka:tuksá:uj</i>
	1PL.INC	-	-	<i>ka:tuksá:uj</i>
	2PL	<i>kila:tuksá:uj</i>	-	<i>ka:tuksa:'tít</i>
	3PL	<i>kinka:tatuksá:ni'</i>	<i>ka:tatuksá:ni'</i>	<i>ka:túksa ~ tatúksa</i>

Table 18 shows that subject and object markers are easily parsable and that participant marking is compositional for most combinations of person, with the exception of constructions with first and second-persons where one or both speech-act participants are plural, further described below. Forms with a third-person plural subject acting on a third-person plural object also demonstrate ambiguity in number-marking, as described below.

As mentioned, there is some ambiguity and non-compositionality in the expression of participant marking in transitive constructions. Verb stems inflected for a second person acting on a first person are ambiguous when one or both participants are plural, as exemplified in (543).

(543) *Kila:tuksá:uj*.

kin-la:-tuks-a:-uj

1OBJ-RCP-hit-IMPF-1PL.SUB

(i) ‘You_{PL} hit me’ 2PL > 1SG

(ii) ‘You_{SG} hit us’ 2SG > 1PL

(iii) ‘You_{PL} hit us’ 2PL > 1PL

Person- and number-marking of subject and object in (543) use a non-compositional combination of the morphemes *kin-* (1OBJ), *la:-* (RCP), and *-uj* (1PL.SUB). The construction results in a three-way ambiguity, where none of the actual interpretations are predicted from the morphological form of the verb.

Similarly, ambiguity arises in verb forms that describe a first-person subject acting on a second-person object when one or both event participants are plural, as in (544).

(544) *I'ka:tuksá:ni'*.

i'k-ka:-tuks-a:-ni'

1SG.SUB-PL.OBJ-hit-IMPF-2OBJ

(i) ‘I hit you all’ 1SG > 2PL

(ii) ‘We hit you’ 1PL > 2SG

(iii) ‘We hit you all’ 1PL > 2PL

The verb formed with the combination of morphemes *i'k-* (1SG.SUB), *ka:-* (PL.OBJ), and *-ni'* (2OBJ) is ambiguous for the number of subject and object with at least one or both having a plural reading. The expected, fully compositional interpretation of the verb in (544) would be ‘I hit you all’.

The marking of object plurality when a third-person subject acts on a third-person object also results in a form that is multiply ambiguous. The ambiguity is seen with the two forms used for expressing a third-person subject acting on a third-person object when one or both are plural, as seen in (545) and (546).

(545) *Ka:túksa*.

ka:-Ø-tuks-a

PL.OBJ-3OBJ-hit-IMPF

(i) 'S/he hit them' 3SG > 3PL

(ii) 'They hit them' 3PL > 3PL

(546) *Tatúksa*.

ta-Ø-tuks-a

3PL.SUB-3OBJ-hit-IMPF

(i) 'They hit her/him/it' 3PL > 3SG

(ii) 'They hit them' 3PL > 3PL

There seems to be a restriction against having both *ka*:- (3PL.OBJ) and *ta*- (3PL.SUB) appear in forms with a third-person subject acting on a third-person object, which results in the ambiguity in (545)-(546). The expected fully compositional form of the verb for 3PL.SUB > 3PL.OBJ is **ka:tatúksa*, which was not accepted by language consultants. The marking of the plurality of the subject or the object in these forms is not based on a morphological restriction of combining the prefixes *ka*:- (PL.OBJ) and *ta*- (3PL.SUB) since the combination is seen in verb forms such as *ka:tatuksá:ni* 'they hit you all'. The choice between marking the plurality of the subject or object has been described as being based on considerations of animacy and discourse in Beck (2016: 7-8) for Upper Necaxa, although this has not been tested in ZT. The restriction that subject- and object-plurality cannot be simultaneously marked in 3 > 3 forms is a property shared by several languages in the Central Totonac branch of the family (MacKay & Trechsel 2015, Beck 2016).

Table 19 summarizes the multiply ambiguous verb forms that result from the marking of person and number in the transitive paradigm, and the combination of morphemes that express these grammatical relations for all verb classes.

Table 19: Multiply ambiguous verb forms in person-number marking

Persons	Verb form	Ambiguous with
		2SG > 1PL
2 > 1	<i>kin- la:- -uj</i>	2PL > 1SG
		2PL > 1PL
		1PL > 2SG
1 > 2	<i>i'k- ka:- -ni'</i>	1SG > 2PL
		1PL > 2PL
		3SG > 3PL
3 > 3	<i>ka:- Ø-</i>	3PL > 3PL
		3PL > 3PL
3 > 3	<i>Ø- ta-</i>	3PL > 3SG

Most languages in the Totonacan family display some combination of participant-marking in the transitive paradigm that results in varying degrees of non-compositionality and multiply-ambiguous verb forms (MacKay & Trechsel 2015, Beck 2016). The idiosyncrasies in the inflectional paradigm with first- and second-persons when one or both participants are plural have been described as “morphological phrasemes” in Beck and Mel’čuk (2011), since the description of each analyzable morpheme in the verb stem departs in some way from the canonical one-to-one pairing between its meaning and form. These non-compositional patterns are not cross-linguistically unusual, either, according to Heath (1998), who argues that they are common in inflectionally complex languages. Heath describes these patterns as being reflective of a process he calls “pragmatic skewing”, in which speakers avoid negative or blunt speech by obscuring the meaning of the person and number morphemes. Beck (2003) also notes that person and number ambiguity in Upper Necaxa Totonac is used for politeness and socially acceptable manners of discourse.

5.1.3 Double Object

In double object constructions, as one finds with datives and similar transfer verbs, verbs may agree with up to two objects. The marking of a second object in ZT makes use of the

same morphological markers as those used for the primary object, as demonstrated in §5.1.2. Object markers, however, do not specify which semantic role is assigned to each argument, which can result in an ambiguous reading when, for instance, both objects are human. The ditransitive verb stem *maxki*: ‘give something to someone’ can exhibit person agreement with two objects, as shown in (547)-(548).

(547) *Minta:tá' kimaxki:ntzá'*.

min-ta:tá' Ø-**kin**-maxki:-**ni'**=tzá'
 2POSS-father 3SG.SUB-**1OBJ**-give-**2OBJ**=now
 ‘Your father already gave you to me (in marriage).’

(548) *Kinta:tá' kimaxki:ntzá'*.

kin-ta:tá' Ø-**kin**-maxki:-**ni'**=tzá'
 1POSS-father 3SG.SUB-**1OBJ**-give-**2OBJ**=now
 ‘My father already gave me to you (in marriage).’

The tri-valent verb stem in (547)-(548) shows overt inflection for two non-third-person objects. While the verb stem is fully compositional, it is morphologically ambiguous between which participant is the PATIENT/THEME (or the object of transfer) or the RECIPIENT, which potentially results in two different readings out of context.

Double-object constructions where at least one of the objects is third-person are morphologically compositional, but exhibit ambiguity as to which object is the primary object, as seen in (549). Ambiguity in the number of objects also arises with the marking of a plural object, such as (550).

(549) *I'kmaxki:ni'*.

i'k-Ø-maxki:-**ni'**
 1SG.SUB-**3OBJ**-give-**2OBJ**
 (i) ‘I gave her/him/it to you’
 (ii) ‘I gave you to her/him/it’

(550) *I'ka:ma:su'yuni'lh kisqá'ta' tzu'ma:ján.*

i'k- ka :-Ø-ma:-su'yú-ni'-lh	kin-sqá'ta'	tzu'ma:ját-n
1SG.SUB- PL.OBJ - 3OBJ -CS-visible-DAT-PFV	1POSS-child	woman-PL
(i) ‘I showed my son to the women.’		
(ii) ‘I showed the women to my son.’		

The only reason we know that *tzu'ma:ján* ‘women’ in (550) is the plural object is because the noun is overtly marked for plurality, which is an optional category of nouns in ZT (see

§4.2). Otherwise, the plural object marker may agree with either or both the THEME (the person being perceived) and the PERCEIVER. The construction potentially results in a three-way ambiguity, as in (551), which demonstrates that the verb *ma:xki:* ‘give something to someone’ inflected for a plural object lends itself to three different interpretations.

(551) *Ka:ma:xki:lh.*

ka:-Ø-Ø-*ma:xki:-lh*

PL.OBJ-3OBJ-3SG.SUB-give-PFV

(i) ‘S/he gives them to her/him/it.’

(ii) ‘S/he gives her/him/it to them.’

(iii) ‘S/he gives them to them.’

The example in (551) indicates that the verb form inflected with *ka:-* (PL.OBJ) is ambiguous as to the number of the THEME (the object of transfer) and RECIPIENT argument. Even if both THEME and RECIPIENT objects are plural as in the third reading in (551), only one plural object marker appears on the verb form.

In sum, agreement in ZT may be marked by affixation, suppletion, stress and laryngealization, or zero-marking. Person- and number-marking that is indexed via affixation is fairly regular for intransitive stems, but shows some ambiguity and non-compositional patterns in the transitive paradigm. In particular, agreement is idiosyncratic when a second-person participant acts on a first-person participant and one or both are plural. The system shows some irregularity in second-person subject marking which is either achieved by penultimate stress and a final short laryngealized vowel or by stem suppletion. Verb stems are further underspecified for third-person singular subjects and objects as these are always marked by the absence of overt morphology. In some cases, verb agreement is also underspecified for number of participants since the marking of a plural subject and object when both are third persons seems to be ungrammatical. Verb agreement in transitive and ditransitive verbs also results in some multiply ambiguous verb forms in the number and semantic roles of the participants involved. The agreement system therefore allows a substantial amount of underspecification resulting in a great deal of ambiguity that is dependent on context to achieve the appropriate reading.

The next section describes the verb morphology for inflectional categories of aspect, tense, and mood. The TAM paradigms show that dynamic verbs take the same agreement patterns for person and number, with the exception of some slight differences with stative

verbs, which are described separately in §5.3. While the examples in this section are all unmarked for the default active voice, patterns of person and number agreement show a different pattern in those verb forms that are overtly marked for other voices, as described in §5.4.

5.2 Aspect, Tense, and Mood

This section discusses the form and function of the TAM (tense-aspect-mood) system in Zihuateutla Totonac. ZT verbs encode grammatical inflection for four aspects, three tenses, and four moods. As previously mentioned, verbs are morphologically divided into two major classes, dynamic and stative verbs, the latter of which do not inflect for aspect unless derived into dynamic stems. The aspectual inflectional potential of dynamic verbs is described first since these paradigms are crucial in terms of form and function. Aspect in ZT is marked with a set of suffixes, all of which show a variety of allomorphic variation, and some instances in which aspectual inflection is unmarked (represented by a zero morpheme below) or by suppletion of the aspectual suffix. Two major aspectual categories, the imperfective and perfective, divide the set of verbs in ZT into three different subclasses based on phonological criteria (Class 1, 2, and 3). These three subclasses result in morphological patterns in the imperfective and perfective paradigms that are synchronically irregular, although they may diachronically show some phonologically and morphologically-determined patterns. Two minor aspects, the progressive and morphological perfect, are more consistently marked on verbs of all three subclasses. It is important to note that even though the perfect functions as a complex tense and is considered a tense in general linguistic theory, as in Comrie (1976) and Dahl (1985) for instance, it is treated as an aspect in ZT based on morphological grounds. The morphological perfect is expressed by suffixation in the same position as other aspectual suffixes as shown in the template introduced in Figure 7. This characterization of the perfect is also in line with the Totonacan linguistic literature, where the cognate suffix is considered the “perfect aspect” (Apopantilla Totonca: Reid and Bishop 1974: 394; Upper Necaxa Totonac: Beck 2004, 2011; Huehuetla Tepehua: Kung 2007a; Filomeno Mata:

McFarland 2009, *inter alia*).

Tense in ZT is expressed through prefixation and makes a distinction for present, past, and future — the unmarked form being the present tense. The three tense categories combine with aspect — the past and present tense combine with the imperfective, progressive, and perfect, for example, although future tense is only found with the imperfective form of the verb.

Mood is a further grammatical category that presents an interaction with tense and aspect marking. Mood in ZT formally distinguishes actual (realis) from non-actual (irrealis) situations. In the indicative mood, which is the unmarked form, the speaker expresses the fact that the event or situation is believed to be a real or true episode. Irrealis situations in ZT are further categorized into the optative, the potential, and the “irrealis”. The optative in ZT may express the speaker’s mental state or attitude about the proposition, while the potential expresses the idea that a speaker believes that the state or event is potentially realizable. The two irrealis moods referred to as the optative and the potential follow the description for Upper Necaxa Totonac in Beck (2011) since ZT seems to follow this system most closely. However, descriptions of the prefixes that are cognate with the ZT optative and potential vary considerably from language to language in the Totonacan literature. Finally, the mood formally referred to as the “irrealis” here is used to refer to a pattern across the Totonacan languages [with the exception of Misantra Totonac (MacKay 1997)] that refers to a combination of affixes, specifically the past tense prefix and perfective suffix, that expresses conditionals, counterfactuals, or impossibility (Apapantilla Totonac: Reid and Bishop 1974; Upper Necaxa Totonac: Beck 2004, 2011; Huehuetla Tepehua: Kung 2007a; Filomeno Mata: McFarland 2009).

Table 20 illustrates some of the possible combinations of tense, mood, and aspect for dynamic verbs in ZT. Both dynamic and stative verbs show inflection for tense [past (*i'x-*), future (*na-*), and present (\emptyset)], and mood [indicative (\emptyset), optative (*ka-*), potential (*ti'*), and “irrealis” with a combination of affixes borrowed from the TAM paradigm]. Only dynamic verbs in ZT inflect for all aspects [imperfective (*-ya:*), perfective (*-li'*), progressive (*-ma:'*), and morphological perfect (*-ni:'tán*)]. Table 20 shows the possible combinations of tense, aspect, and mood that have been documented for ZT. The expression of a zero marker in Table 20 is used to indicate those categories that are realized by the absence of overt

morphology, namely, the present tense and the indicative mood. These unmarked forms are represented with a \emptyset in Table 20.

Table 20: Combinations of Tense, Aspect and Mood in ZT

	Indicative				
	Imperfective	Perfective	Progressive	Perfect	
Realis	Past	<i>i'x- \emptyset- -ya:</i>		<i>i'x- \emptyset- -ma:'</i>	<i>i'x- \emptyset- -ni:'tán</i>
	Present	<i>\emptyset- \emptyset- -ya:</i>	<i>\emptyset- -li'</i>	<i>\emptyset- \emptyset- -ma:'</i>	<i>\emptyset- \emptyset- -ni:'tán</i>
	Future	<i>na- \emptyset- -ya:</i>			
Irrealis	Optative				
		Imperfective	Perfective	Progressive	Perfect
		<i>ka- -ya:</i>	<i>ka- -li'</i>	–	–
	Potential				
		Imperfective	Perfective	Progressive	Perfect
		<i>ti'--ya:</i>	<i>ti'- -li'</i>	–	–
Irrealis					
	Past	<i>i'x- ti'- -li'</i>			
	Present	<i>i'x- -li'</i>			
	Future	<i>ka- ti'- -li'</i>			

Table 20 demonstrates that the indicative mood (\emptyset) combines with all aspects and tenses, albeit in restricted ways. The grey shaded region in the table indicates illicit combinations in the paradigm that are due to grammatical restrictions. These grammatical restrictions represented in the table are, first, the future tense (*na-*) which does not combine with aspectual inflection except for the imperfective aspect (*-ya:*) of the indicative mood (\emptyset). Second, the perfective aspect (*-li'*) does not combine with tense inflection in the indicative mood (\emptyset), or at least it is unattested in the collection of data in the ZT database.

Table 20 further shows that the optative (*ka-*) and the potential (*ti'-*) mood are only found combined with the imperfective (*-ya:*) and the perfective (*-li'*) in the ZT database. The

optative (*ka-*) and potential (*ti'*) mood are not found with tense markers or with the progressive or perfect, indicated in the table with a dash (–), which may be due to a gap in the data or may be a property of the language.²⁷ The mood formally described as the irrealis is encoded by an idiosyncratic combination of morphemes (prefixes and suffixes) borrowed from other parts of the TAM paradigm and takes inflection for all three tenses — past (*i'x-ti' -li'*), present (*i'x- -li'*), and future (*ka- ti' -li'*) — but does not seem to make distinctions in aspectual inflection. While understanding the TAM system in ZT needs further work, especially with the gaps listed above, the system generally coincides with that found for UNT. Beck (2011a) represents the most detailed description of the TAM system for a Totonacan language.

The form and function of each of these categories is described in more detail below. The aspectual paradigms for dynamic verbs are covered in §5.2.1, followed by tense inflection (see §5.2.2), and mood marking (see §5.2.3). The inflectional categories and conjugation patterns of stative verbs and derived dynamic forms of stative verbs are discussed in §5.3. For heuristic purposes, in these sub-sections of §5.2, tense and aspectual inflections that are marked by the absence of overt morphology are illustrated with a zero affix in the position where or nearest to where other tense or aspect affixes occur. The marking of a zero morpheme for the indicative mood and a zero morpheme for third-person subjects and objects are not indicated unless it is relevant to the description.

5.2.1 Aspect

Dynamic verbs in Zihuateutla Totonac can potentially take aspectual inflections for four aspects: imperfective, perfective, progressive, and what has been labelled above as the morphological perfect. Comrie (1976: 5) defines aspect as indicating the “internal temporal constituency of the situation” which is expressed through grammatical categories. ZT has two major aspects in this respect: the imperfective and the perfective. The imperfective

²⁷ In other Central Totonac languages, such as Apapantilla (Reid 1991:11-12), the optative is only found in perfective forms; however, in Upper Necaxa, it combines with all four aspectual suffixes to form a full paradigm (Beck 2011a: 19). Similarly, the potential mood, which in Upper Necaxa combines with all tense and aspects, is found only combined with the imperfective and perfective suffix in the ZT database; therefore, this gap is not a semantic restriction on combining the potential with tense and aspect but may rather be a language-particular one or a disparity in the data collection.

aspect signals that the situation or event denoted by the verb has an internal temporal structure that can be potentially interrupted (Comrie 1976: 16). In ZT, the imperfective expresses temporally unbounded, incomplete, continuous, or habitual states or events. With the use of the perfective, according to Comrie (1976: 16), the speaker perceives a situation or event as a single whole without distinguishing the individual parts or phases that make up that situation. The perfective in ZT, on the other hand, expresses temporally bounded or completed states or events and is used to recount a sequence of bounded or completed situations in discourse narratives. These two aspects divide the class of dynamic verbs into three phonologically-driven morphological subclasses based on their inflectional patterns. These subclasses in ZT are divided on phonological criteria into Class 1 (vowel-final stems), Class 2 (consonant-final), and Class 3 (*n*-final stems), where *n* represents a nasal consonant. Some *n*-final stems in elicited forms involve free variation in the use of Class 2 and Class 3 conjugations and so these forms are best analyzed in context. The conjugation classes are similar to those found throughout Central Totonac with minor variations. These conjugation classes appear paradigmatically irregular and idiosyncratic from a synchronic perspective and may be explained by participant marking. Even though the data are being described as completely analyzable, these forms may be better described synthetically, particularly within the imperfective and perfective paradigms which show the most variability and underspecification in comparison to other grammatical aspects.

In addition to the two major aspects, ZT also has a progressive aspect, which can be thought of semantically as a subcategory of the imperfective as in Comrie (1976: 25) since it denotes states or events that are ongoing, in progress, or have habitual senses. The progressive aspect does not make a distinction between the inflectional classes and is marked more regularly with the exception of second person subjects where it is marked by suppletion of the aspectual suffix. Finally, following the Totonacan linguistic literature, the morphological perfect is categorized as an aspect since it is expressed morphologically as a suffix in the same position as other aspectual affixes, as seen in Figure 7; this is opposed to tense, which is expressed in the language by prefixes. The morphological perfect in ZT, however, is semantically a complex tense expressing the relation between two time-points, marking one event as occurring prior to or being relevant to another event in time (Comrie 1976: 52). The perfect does not make any distinctions between conjugation classes but does

show some morphologically driven allomorphic variations that may also be described by participant marking.

This section describes the potential for aspectual inflection of dynamic verbs in ZT — the imperfective (see §5.2.1.1), perfective (see §5.2.1.2), progressive (see §5.2.1.3), and morphological perfect (see §5.2.1.4). The aspectual paradigms for dynamic verbs are rather complex, being divided into three classes based on the inflectional patterns in the imperfective and perfective paradigms. The analysis proceeds in the direction from form to function by first illustrating the inflectional potential of the morphological paradigms and then presenting some of their functions. Even though the analysis is largely embedded in terms of being completely analyzable – that is, a layering of form-meaning pairings — the data ultimately show that these forms are synchronically lexical, which is particularly apparent in the marking of the imperfective and perfective paradigms. In each section, the inflectional paradigms for intransitive verbs are first described followed by the inflectional paradigms for transitive verbs; this is followed by a brief discussion on some of the possible functions of aspect in ZT. The aspectual conjugation classes of intransitive and transitive dynamic verbs are given in the present tense of the indicative mood, as these forms have no overt tense or mood affixes.

5.2.1.1 Imperfective

The imperfective aspect in ZT is used to express situations that are temporally unbounded, incomplete, continuous, or habitual. The imperfective paradigm categorizes dynamic stems into different conjugation classes. These conjugation classes are phonologically-driven, divided into Class 1 (vowel-final stems), Class 2a (consonant-final stems), Class 2b (a set of *n*-final stems), and Class 3 (an idiosyncratic set of *n*-final stems), where the *n* represents a nasal consonant. The full form of the imperfective is the suffix *-ya:* (IMPF), which has several morphologically determined allomorphs that depend on the inflectional class of the verb and the person and number of subject or object; the imperfective suffix can be *-a:(')*, *-a(')*, *-ya(')*, *ya:(')* and *-∅*, where the parenthesis (') represents that depending on the person, class, and aspect of the verb, the vowel may or may not be laryngeal.

Imperfective Dynamic Intransitive Paradigms

Table 21 illustrates the conjugation classes of the imperfective paradigm for intransitive verb stems in the present tense of the indicative mood. In this table, the imperfective distinguishes between the conjugation patterns for Class 2a and 2b verbs; these two classes are conflated in the perfective paradigm (cf. §5.2.1.2), where *n*-final stems behave more like consonant-final stems. The suffixes denoting the imperfective have been highlighted in bold in Table 21.

Table 21: Aspectual paradigms for imperfective intransitive dynamic verbs for Class 1, 2a/b, and 3 stems *taxtú* ‘leave’, *pax-* ‘bathe’, *kalhwán* ‘cry’, and *wa’yán* ‘eat_{INTR}’

	Class 1	Class 2a	Class 2b	Class 3
	<i>taxtú</i> ‘leave’	<i>pax-</i> ‘bathe’	<i>kalhwán</i> ‘cry’	<i>wa’yán</i> ‘eat _{INTR} ’
1SG	<i>i'ktaxtú</i>	<i>i'kpáxa</i>	<i>i'kalhwán</i>	<i>i'kwa'yán</i>
2SG	<i>taxtúya'</i>	<i>páxa'</i>	<i>kalhwána'</i>	<i>wa'yána'</i>
3SG	<i>taxtú</i>	<i>páxa</i>	<i>kalhwán</i>	<i>wa'yán</i>
1PL.EXC	<i>i'ktaxtuyá:uj</i>	<i>i'kpaxá:uj</i>	<i>i'kalhwaná:uj</i>	<i>i'kwa'yaná:uj</i>
1PL.INC	<i>taxtuyá:uj</i>	<i>paxá:uj</i>	<i>kalhwaná:uj</i>	<i>wa'yaná:uj</i>
2PL	<i>taxtuya:'tít</i>	<i>paxa:'tít</i>	<i>kalhwana:'tít</i>	<i>wa'yana:'tít</i>
3PL	<i>tataxtú</i>	<i>tapáxa</i>	<i>takalhwán</i>	<i>tawa'yán</i>

Table 21 demonstrates that the intransitive imperfective paradigm makes a distinction between the patterns found in Class 1 (vowel-final stems), Class 2a (consonant-final stems), and Class 2b/3 (*n*-final stems). Class 1 (vowel-final) stems take the full form of the suffix *-ya:* on all stems that have a person-agreement suffix but is unmarked in those forms that do not take person suffixes, except for second-person singular subjects where it is marked with *-ya'*. Class 2a (consonant-final) stems take the imperfective allomorph *-a:* for all consonant-final stems regardless of person or number with some allomorphic variation described below. Class 2b/3 (*n*-final) stems take the allomorph *-a:* found in Class 2a, but show the same zero-marking pattern as Class 1. The Class 3 set of *n*-final stems are archaic forms, a historical remnant of patterns found in other languages in the family — the system of which seems to be regularizing by conjugating *n*-final stems more like other consonant-

final stems (Beck 2011a: 21-30). This pattern may be a kind of analogical leveling where speakers are regularizing the system of *n*-final stems based on perceived similarities with the conjugation patterns of consonant-final stems. These forms are discussed in more detail below.

Class 1 (vowel-final) stems take the full form of the suffix *-ya:* in all forms with a person agreement suffix, namely, the first-person plural (552)²⁸ and second-person plural forms (553). With second-person plural subjects, the imperfective suffix is laryngealized, which is usual of second-person subject forms (see §5.1.1).

(552) *I'kaxtuyá:uj*.
 i'k-taxtú-**ya:**-uj
 1SG.SUB-leave-**IMPF**-1PL.SUB
 'We_{EXC} leave'

(553) *Taxtuya:'tít*.
 taxtú-**ya:'**-tít
 leave-**IMPF:2SUB**-2PL.SUB
 'You all leave'

In Class 2a/b and 3, the suffix is realized as *-a:* in forms with person suffixes, such as (554)-(557).

(554) *I'kpaxá:uj*.
 i'k-pax-**a:**-uj
 1SG.SUB-bathe-**IMPF**-1PL.SUB
 'We_{EXC} bathe'

(555) *I'kwa'yaná:uj*.
 i'k-wa'yan-**a:**-uj
 1SG.SUB-eat-**IMPF**-1PL.SUB
 'We_{EXC} eat'

(556) *Paxa:'tít*.
 pax-**a:'**-tít
 bathe-**IMPF:2SUB**-2PL.SUB
 'We_{EXC} bathe'

²⁸ The combination of the first-person affixes *i'k-* *-uj* on this verb expresses a first-person plural exclusive subject (see §5.1.1).

(557) *Wa'yana: 'tít.*
 wa'yán-a:'-tít
 eat-**IMPF:2SUB-2PL.SUB**
 'You all eat'

Class 2 and 3 verb forms that take person suffixes are the first person plural subject with the suffix *-uj*, where the imperfective is realized as *-a:*, as seen in (554)-(555), and the second-person plural suffix *-tít*, where the imperfective suffix *-a:* is laryngealized as is typical of second-person subject agreement, as shown in (556)-(557).

In Class 2a, the allomorph is a short final vowel *-a* (IMPF) with first and third persons, as seen in (558)-(560).

(558) *I'kpáxa.*
 i'k-pax-a
1SG.SUB-bathe-IMPF
 'I bathe'

(559) *Páxa.*
 Ø-pax-a
3SG.SUB-bathe-IMPF
 'S/he bathes'

(560) *Tapáxa.*
 ta-pax-a
3PL.SUB-bathe-IMPF
 'They bathe'

With second-person singular subject forms for all classes, the imperfective suffix takes the form of a short final laryngeal vowel, which is typical of second-person singular subject inflection (see §5.1.1), as in (561)-(563).

(561) *Taxtúya'.*
 taxtú-ya'
 leave-**IMPF:2SG.SUB**
 'You leave'

(562) *Páxa'.*
 pax-a'
 bathe-**IMPF:2SG.SUB**
 'You bathe'

(563) *Wa'yána'*
wa'yán-a'
eat-IMPf:2SG.SUB
'You eat'

In Class 1, 2b, and 3, those forms without person agreement suffixes take a default imperfective reading, which is marked here with a zero morpheme, as seen in (564)-(566).

(564) *I'kwa'yán.*
i'k-wa'yán-Ø
1SG.SUB-eat-IMPf
'I eat'

(565) *Taxtú.*
Ø-taxtú-Ø
3SG.SUB-leave-IMPf
'S/he leaves'

(566) *Takalhwán.*
ta-kalhwán-Ø
3PL.SUB-cry-IMPf
'They cry'

Since the imperfective is realized by the absence of overt morphology in Class 1, 2b, and 3 stems that do not involve person agreement suffixes, the pattern may be generalized in terms of participant marking, where those forms that take third-person participant(s) or a first-person singular subject — all marked with prefixes — have a default imperfective reading. The forms are idiosyncratic and are better analyzed contextually in order to understand the range of uses of the imperfective in natural discourse. For this reason, and for heuristic purposes, forms which are unmarked for the imperfective suffix are represented in the morphological gloss as a zero affix -Ø (IMPf) in subsequent sections on aspect.

Imperfective Dynamic Transitive Paradigms

Imperfective marking for the dynamic transitive paradigms follows the same patterns as for the intransitive and is illustrated in Table 22 through Table 24. The imperfective marker is retained in those forms with person suffixes and takes a zero allomorph in those forms lacking a person agreement suffix, except for stems with second-person singular subjects.

Class 2 verbs show that imperfective marking is overt in all forms similar to Class 2a in the intransitive paradigm. The data suggest that verb forms unmarked for aspect which have at least one third-person participant take a default imperfective reading. In each of these tables, the imperfective suffix has been highlighted in bold; the dash (-) in the table represent illicit or at least unattested forms in ZT.

Table 22: Imperfective transitive dynamic verb forms, Class 1 (*mu'sú* ‘kiss’)

SINGULAR OBJECTS			
	1OBJ	2OBJ	3OBJ
1SG	–	<i>i'kmu'suyá:ni'</i>	<i>i'kmu'sú</i>
2SG	<i>kimu'súya'</i>	–	<i>mu'súya'</i>
3SG	<i>kimu'sú</i>	<i>mu'suyá:ni'</i>	<i>mu'sú</i>
1PL.EXC	–	<i>i'ka:mu'suyá:ni'</i>	<i>i'kmu'suyá:uj</i>
1PL.INC	–	–	<i>mu'suyá:uj</i>
2PL	<i>kila:mu'suyá:uj</i>	–	<i>mu'suya:'tít</i>
3PL	<i>kintamu'sú</i>	<i>tamu'suyá:ni'</i>	<i>tamu'sú</i>
PLURAL OBJECTS			
1SG	–	<i>i'ka:mu'suyá:ni'</i>	<i>i'ka:mu'sú</i>
2SG	<i>kila:mu'suyá:uj</i>	–	<i>ka:mu'súya'</i>
3SG	<i>kinka:mu'suyá:ni'</i>	<i>ka:mu'suyá:ni'</i>	<i>ka:mu'sú</i>
1PL.EXC	–	<i>i'ka:mu'suyá:ni'</i>	<i>i'ka:mu'suyá:uj</i>
1PL.INC	–	–	<i>ka:mu'suyá:uj</i>
2PL	<i>kila:mu'suyá:uj</i>	–	<i>ka:mu'suya:'tít</i>
3PL	<i>kinka:tamu'suyá:ni'</i>	<i>ka:tamu'suyá:ni'</i>	<i>tamu'sú ~ ka:mu'sú</i>

Table 22 shows the aspectual conjugation only differs from the intransitive paradigm in those forms with the object suffix *-ni'* (2SG.OBJ), which take the full form of the imperfective marker *-ya:*, i.e. forms with 1SG and 3SG/PL subjects acting on second-person objects, and 3SG/PL subjects acting on first-person singular objects.

Table 23: Imperfective transitive dynamic verb forms, Class 2 (*tuks-* ‘hit’)

SINGULAR OBJECTS			
	1OBJ	2OBJ	3OBJ
1SG	–	<i>i'ktuksá:ni'</i>	<i>i'ktúksa</i>
2SG	<i>kintúksa'</i>	–	<i>túksa'</i>
3SG	<i>kintúksa</i>	<i>tuksá:ni'</i>	<i>túksa</i>
1PL.EXC	–	<i>i'ka:tuksá:ni'</i>	<i>i'ktuksá:uj</i>
1PL.INC	–	–	<i>tuksá:uj</i>
2PL	<i>kila:tuksá:uj</i>	–	<i>tuksa:'tít</i>
3PL	<i>kintatúksa</i>	<i>tatuksá:ni'</i>	<i>tatúksa</i>
PLURAL OBJECTS			
1SG	–	<i>i'ka:tuksá:ni'</i>	<i>i'ka:túksa</i>
2SG	<i>kila:tuksá:uj</i>	–	<i>ka:túksa'</i>
3SG	<i>kinka:tuksá:ni'</i>	<i>ka:tuksá:ni'</i>	<i>ka:túksa</i>
1PL.EXC	–	<i>i'ka:tuksá:ni'</i>	<i>i'ka:tuksá:uj</i>
1PL.INC	–	–	<i>ka:tuksá:uj</i>
2PL	<i>kila:tuksá:uj</i>	–	<i>ka:tuksa:'tít</i>
3PL	<i>kinka:tatuksá:ni'</i>	<i>ka:tatuksá:ni'</i>	<i>ka:túksa ~ tatúksa</i>

Table 23 shows the imperfective paradigm for Class 2 (consonant-final) verb stems, which takes the imperfective allomorph *-a:* in forms with an overt person agreement suffix, and the short *-a* in those forms without person suffixes; no forms are unmarked for the imperfective aspect for Class 2 stems.

Table 24: Imperfective transitive dynamic verb forms, Class 3 (*laqtzín* ‘see’)

SINGULAR OBJECTS			
	1OBJ	2OBJ	3OBJ
1SG	–	<i>i'klaqtziná:ni'</i>	<i>i'klaqtzín</i>
2SG	<i>kilaqtzína'</i>	–	<i>laqtzína'</i>
3SG	<i>kilaqtzín</i>	<i>laqtziná:ni'</i>	<i>laqtzín</i>
1PL.EXC	–	<i>i'ka:laqtziná:ni'</i>	<i>i'klaqtzi'ná:uj</i>
1PL.INC	–	–	<i>laqtziná:uj</i>
2PL	<i>kila:laqtziná:uj</i>	–	<i>laqtzina:'tít</i>
3PL	<i>kintalaqtzín</i>	<i>talaqtziná:ni'</i>	<i>talaqtzín</i>
PLURAL OBJECTS			
1SG	–	<i>i'ka:laqtzi'ná:ni'</i>	<i>i'ka:laqtzín</i>
2SG	<i>kila:laqtziná:uj</i>	–	<i>ka:laqtzína'</i>
3SG	<i>kinka:laqtziná:ni'</i>	<i>ka:laqtziná:ni'</i>	<i>ka:laqtzín</i>
1PL.EXC	–	<i>i'ka:laqtziná:ni'</i>	<i>i'ka:laqtziná:uj</i>
1PL.INC	–	–	<i>ka:laqtziná:uj</i>
2PL	<i>kila:laqtziná:uj</i>	–	<i>ka:laqtzina:'tít</i>
3PL	<i>kinka:talaqtziná:ni'</i>	<i>ka:talaqtziná:ni'</i>	<i>talaqtzín ~ ka:laqtzín</i>

Table 24 illustrates the transitive paradigm for Class 3 (*n*-final) stems, which mark the imperfective aspect with the *-a(:)* allomorph similar to Class 2. The paradigm differs from Class 2, however, in that it follows the patterns of Class 1 verbs with a zero allomorph for all forms which do not take a person agreement suffix, except for second-person singular subject stems which take a short laryngeal *-a'* (IMPF:2G.SUB). Class 2b follows the same pattern as Class 3 verbs in the transitive paradigm. In general, the data show that those verb forms which are unmarked for the imperfective aspect take at least one third-person participant. The morphological pattern suggests that unmarked aspectual forms of verbs where at least one participant is not a speech-act participant takes a default imperfective reading.

Functions of the Imperfective

Verb forms in the imperfective aspect express unbounded and continuous states or events, as in (567)-(568).

(567) *I'kpa:stá'ka wa'chi' min kintakálhwa.*

Ø-i'k-pa:sta'k-a wa'chi' Ø-min-Ø kin-takálhwa
 PRES-1SG.SUB-remember-IMPF like.that PRES-come-IMPF 1POSS-sob
 'I remember it, like that, my tears come.' [RVA: Cuentos 57]

(568) *I'xi'kchiwinayá: e:' i'xi'kpu:chaqe:nimá:'.*

i'x-i'k-chiwi-nan-ya: e:' i'x-i'k-pu:-che'qé:-nin-ma:'
 PST-1SG.SUB-say-AP-IMPF and PST-1SG.SUB-CNTR-wash-AP-PROG
 'I was talking (on the phone) and washing (the dishes).'

In (567), the speaker uses the imperfective to describe a situation that is occurring and in progress at the time of speech while the example in (568) uses the imperfective to denote an event that is ongoing at the same time as another ongoing event.

The imperfective aspect is used in expressions of habitual events signaling a regularly occurring situation over a period of time in the present (569) or past (570)-(571).

(569) *Kaklh i'kqaxmá'ta chi: wankán.*

kaklh Ø-i'k-qaxmá't-a chi: Ø-wan-kan
 only PRES-1SG.SUB-hear-IMPF PTCL PRES-say-IDF:IMPF
 'I only listen to what (the bible) says.' [RVA: Cuentos 78]

(570) *Xánka' i'skúja kinta:tá' i'skúja kintzi:'t.*

xánka' i'x-skuj-a kin-ta:tá' i'x-skuj-a kin-tzi:t
 well PST-work-IMPF 1POSS-father PST-work-IMPF 1POSS-mother
 'My father used to work well; my mother used to work well.' [RVA: Cuentos 37]

(571) *Lha: máti i'xlakstín mat i'xtala:ta:'qó'ta.*

lha: mat=i i'x-lakstín mat i'x-ta-la:-ta:'-qo't-a
 NEG QTV=JUNCT 3POSS-children QTV PST-3PL.SUB-RCP-CMT-drink-IMPF
 'It's said (they had) no children and they used to go drink together.'
 [SLO: Cuentos 60]

Additionally, the imperfective aspect appears with all situations or events that occur with the future tense, as in (572)-(574). The future tense does not combine with other aspects in ZT, which is also shown in §5.2.2.3.

(572) *Natlawayá:uj qá'tla' makskút.*

na-tlawá-**ya**:-uj qá'tla' makskút
FUT-make-**IMPF**-1PL.SUB big fire
'We are going to make a big fire.' [FAS: Woodchopper 7]

(573) *Nacha'ná:uj qantín tasli'tni' kí'wi'.*

na-cha'n-**a**:-uj qan-tin tasli'tni' kí'wi'
FUT-plant-**IMPF**-1PL.SUB NUM.CLF-one straight.line tree
'We are going to plant a row of trees.'

(574) *Xatzé ma:x a'ntzá' natatu:staqo:yá:uj porque wi: xka:n.*

xatzé ma:x a'ntzá' **na**-tatu:sta-qo:-**ya**:-uj
better.that probably over.there FUT-go.up-TOT-**IMPF**-1PL.SUB

porque wi: xka:n
because sit water

'It would probably be better for all of us to go up over there because there is water.'
[SLO: Cuentos 114]

In (572)-(574), the future imperfective form of the verb is used to express the idea that a situation is planned or predicted to happen in the imminent future. All future time events in ZT are imperfective as these events are unrealized and are therefore perceived as incomplete and unbounded situations.

The imperfective also appears in expressions of irrealis or situations that are perceived as being unrealized or unactualized and viewed as incomplete, as in the negative clause in (575) and the conditional clause in (576).

(575) *Lha: kila:ta:'latulakutuná:uj.*

lha: kin-la:-ta:'-la-tula-kutun-**a**:-uj
NEG 1OBJ-RCP-CMT-be-sit-DSD-**IMPF**-1PL.SUB
'You all don't want to live with me.' [RVA: Cuentos 24]

(576) *Sa: sqo'lúkutúna', kapi'nchi' nakpu:tánti'!*

sa: sqo'lú-kutun-**a**' ka-pi'n-chi'
if urinate-DSD-**IMPF**:2SG.SUB OPT-go:2SUB-DIST:2SG.SUB:PFV

nak=pu:tánti'

LOC=toilet

'If you want to pee, go to the bathroom!'

In terms of connected discourse contexts, verb forms in the imperfective aspect are used to

background events for which other events take place, as seen in the discourse episode from the Woodchopper story presented here in (577).

(577) *Tzukúlh laqxqá i'xkí'wi' e:' ka:ná:j tu: waní i'xpuská:t. Te:maqá:lh qantín kí'wi' naktéj lha: laktaxtú Maria.*

- (a) tzukú-lh laq-xqa-Ø i'x-kí'wi'
begin-PFV INTS-split-IMPF 3POSS-wood
- (b) e:' ka:ná:j tu: wan-ni-Ø i'x-puská:t
and truly HREL say-DAT-IMPF 3POSS-woman
- (c) te:-maqá:n-lh qan-tin kí'wi' nak=tej
PATH-drop-PFV NUM.CLF-one stick LOC=path
- lha: lak-taxtú-Ø Maria
where INTNS-leave-IMPF Maria

‘(a) He began chopping his wood. (b) And it was true what his wife said to him. (c) He passed by and dropped a stick on the road where Maria comes out.’ [FAS: Woodchopper 15-17]

The imperfective form of the verbs in (577) fall into Class 1 (vowel final) stems, which take a default third-person present imperfective reading. While the verb stems in the perfective are used to relate the events in the narrative as they progress driving the occurrence of events forward (also discussed in §5.2.1.2), situations in the imperfective serve as a background for which the other events occur.

To summarize this section on imperfective aspect, the imperfective combines with the present and past tense to indicate that an event is unbounded, incomplete, or continuous at or prior to the time of speech, or to express the fact that an action is recurring or habitual. The marking of the future tense requires the verb to be in the imperfective aspect. Since future events are inherently indeterminate, indicating unrealized or unactualized situations, all future time events in ZT seem to involve unbounded or incomplete aspect. Imperfective forms of verbs function to background events in narrative structures as is typologically common of the imperfective. This function is opposed to other tensed and perfective forms which are used to advance the narrative by viewing each event as a bounded whole. In terms of form, the imperfective aspect shows much variability and morphologically driven

allomorphy, in addition to being underspecified in many forms with at least one third-person participant. The data suggests that forms which are unmarked for aspect and take at least one or more third-person participant(s) are lexicalized to take a default imperfective reading. This generalization is opposed to those forms that are unmarked for the perfective aspect as described in the next subsection.

5.2.1.2 Perfective

The perfective aspect in ZT denotes temporally bounded or completed states or events and is used in narratives to recount the progression of occurrences as they happen one after the other. The perfective paradigms display the most morphological variation. Perfective marking may be achieved by suffixation or the lack of overt aspectual morphology. The full form of the perfective suffix is postulated as *-li'*, but it has a number of morphologically driven suppletive allomorphs or is marked by lack of an overt aspectual affix depending on the subject and verb class to which the stem belongs. Perfective aspect is the only aspect that is marked after the subject and object suffixes rather than preceding them as shown in the verb template in Figure 7. Verb forms in the perfective often take a zero allomorph in those forms with person suffixes for Class 1 (vowel-final stems) and 2b/3 (*n*-final stems). This pattern is in contrast to the imperfective paradigm, where the imperfective suffix is overt in forms with person suffixes. In Class 2 (consonant-final) stems, the perfective suffix is overt in most stems, some of which are marked by suppletion of the perfective suffix. In this section, the intransitive paradigms of the perfective are first described followed by the transitive paradigms; a discussion of some of the possible functions of the perfective aspect in ZT follows.

Perfective dynamic intransitive paradigms

Table 25 illustrates the aspectual paradigms for Class 1, 2a/b, and 3 perfective intransitive dynamic verbs. The suffix marking the perfective aspect in each of the verb forms in the table have been highlighted in bold.

Table 25: Aspectual paradigms for perfective dynamic intransitive verbs for Class 1, 2a/b, and 3 stems *taxtú* ‘leave’, *pax-* ‘bathe’, *kalhwán* ‘cry’, and *wa’yán* ‘eat_{INTR}’

	Class 1	Class 2a	Class 2b	Class 3
	<i>taxtú</i> ‘leave’	<i>pax-</i> ‘bathe’	<i>kalhwán</i> ‘cry’	<i>wa’yán</i> ‘eat _{INTR} ’
1SG	<i>i'ktaxtúlh</i>	<i>i'kpáxli'</i>	<i>i'kalhwánli'</i>	<i>i'kwa'yálh</i>
2SG	<i>táxtu'</i>	<i>páxti'</i>	<i>kalhwánti'</i>	<i>wá'ya'</i>
3SG	<i>taxtúlh</i>	<i>páxli'</i>	<i>kalhwánli'</i>	<i>wa'yálh</i>
1PL.EXC	<i>i'ktaxtúj</i>	<i>i'kpáxwi'</i>	<i>i'kalhwánwi'</i>	<i>i'kwa'yáuj</i>
1PL.INC	<i>taxtúj</i>	<i>páxwi'</i>	<i>kalhwánwi'</i>	<i>wa'yáuj</i>
2PL	<i>taxtutit</i>	<i>paxtit</i>	<i>kalhwantit</i>	<i>wa'yantit</i>
3PL	<i>tataxtúlh</i>	<i>tapáxli'</i>	<i>takalhwánli'</i>	<i>tawa'yálh</i>

The intransitive paradigm in Table 25 shows that the perfective aspect does not distinguish between class 2a and 2b verbs, indicating that some *n*-final stems are behaving more like consonant final stems, apart from those stems that still pattern like Class 3 (archaic *n*-final stems). The perfective forms found in Table 25 are described in detail below.

The full form of the perfective suffix *-li'* is found in Class 2 (consonant-final) verb stems without agreement suffixes, namely those forms with 1SG and 3SG/PL subjects, as in (578)-(580).

(578) *I'kpáxli'*.

i'k-pax-li'

1SG.SUB-bathe-PFV

‘I bathed’

(579) *Páxli'*.

\emptyset -pax-li'

3SG.SUB-bathe-PFV

‘S/he bathed’

(580) *Tapáxli'*.

ta-pax-li'

3PL.SUB-bathe-PFV

‘They bathed’

In Class 2 (consonant-final) verb stems, the perfective is marked by suppletion of the

perfective suffix in first-person plural subject forms with *-wi'* (1PL.SUB), as seen in (581), and in second-person singular subject forms with *-ti'* (2SG.SUB:PFV), as seen in (582).

(581) *I'kpáxwi'*.
i'k-pax-wi'
1SG.SUB-bathe-1PL.SUB:PFV
'We_{EXC} bathed'

(582) *Páxti'*.
pax-ti'
bathe-2SG.SUB:PFV
'You bathed'

Class 1 (vowel-final) and Class 3 (*n*-final) stems mark the perfective aspect with the suppletive suffix *-lh /l/* in 1SG and 3SG/PL subject forms, as seen in (583)-(586).

(583) *Taxtúlh*.
Ø-taxtú-lh
3SG.SUB-leave-PFV
'S/he left'

(584) *Tataxtúlh*.
ta-taxtú-lh
3PL.SUB-leave-PFV
'They left'

Class 3 (*n*-final) verbs that take the perfective *-lh* do not take the final nasal of the *n*-final stem, as in (585)-(586); the verb has been bolded in the orthographic line which shows the absence of the nasal.

(585) *Wa'yá**lh***.
Ø-wa'yán-lh
3SG.SUB-eat-PFV
'S/he ate'

(586) *Tawa'yá**lh***.
ta-wa'yán-lh
3PL.SUB-eat-PFV
'They ate'

Class 1 (vowel-final) and 3 (*n*-final) stems that show agreement for a second person singular subject take a default perfective reading marked by zero allomorph, as seen in

(587)-(588).

(587) *Táxtu'*.

táxtu'-Ø

leave:2SG.SUB-PFV

'You left'

(588) *Wá'ya'*.

wá'ya'-Ø

eat:2SG.SUB-PFV

'You ate'

All other forms in Class 1 (vowel-final) and 3 (*n*-final) stems that end in person suffixes also take a default perfective reading marked by a zero allomorph, as in (589)-(590).

(589) *Taxtij*.

taxtú-uj-Ø

leave-1PL.SUB-PFV

'We_{INC} left'

(590) *Wa'yáuj*.

wa'yán-uj-Ø

eat-1PL.SUB-PFV

'We_{INC} ate'

For all classes, verbs with a second-person plural subject marked with the agreement suffix *-tit* take a default perfective reading, as seen in (591)-(593).

(591) *Taxtutít*.

taxtú-tit-Ø

leave-2PL.SUB-PFV

'You all left'

(592) *Paxtít*.

pax-tit-Ø

bathe-2PL.SUB-PFV

'You all bathed'

(593) *Wa'yantít*.

wa'yán-tit-Ø

eat-2PL.SUB-PFV

'You all ate'

Forms that are unmarked for the perfective, as in (591)-(593), are also unmarked in all verb classes with the second-person object suffix *-ni'* (2OBJ) in the transitive paradigms (presented below). The unmarked pattern in (587)-(593) may more generally be explained through person marking, where those forms that take at least one or more second-person participant(s) or a first-person plural subject take a default perfective reading. These forms are once again idiosyncratic and better analyzed in context in order to observe the various functions the aspect denotes. For heuristic purposes, therefore, those forms which are unspecified for the perfective are represented in the morphological gloss as a zero affix *-∅* (PFV) in subsequent sections on aspect.

Perfective dynamic transitive paradigms

The transitive perfective paradigm displays patterns similar to the intransitive forms, where the perfective shows much variation in Class 2 (consonant-final) verbs and takes a default perfective reading in those forms with an agreement suffix in Class 1 (vowel-final) and Class 3 (*n*-final) stems. Additionally, in the transitive paradigms for all verb classes, those forms that take the second-person object suffix *-ni'* also show zero marking of the perfective aspect, as in (594).

(594) *Ka:mu'súni'*
 ka:–∅–mu'sú–ni'–∅
 PL.OBJ–3SG.SUB–kiss–2OBJ–PFV
 'S/he kissed you all'

This pattern more generally suggests that verbs that are unmarked for aspect are lexicalized to take a default perfective reading when at least one participant (either subject or object) is first-person plural or second-person (singular or plural). This observation is in opposition to those forms that are underspecified in the transitive imperfective paradigm.

Table 26 through Table 28 illustrate the perfective forms of the transitive paradigms for Class 1, 2, and 3 verbs. The perfective suffix in each of the tables has been highlighted in bold, while the dash (-) represents illicit or unattested forms in the paradigm.

Table 26: Perfective transitive forms, Class 1 (*mu'sú* ‘kiss’)

SINGULAR OBJECTS			
	1OBJ	2OBJ	3OBJ
1SG	–	<i>i'kmu'súni'</i>	<i>i'kmu'súlh</i>
2SG	<i>kimú'su'</i>	–	<i>mú'su'</i>
3SG	<i>kimu'súlh</i>	<i>mu'súni'</i>	<i>mu'súlh</i>
1PL.EXC	–	<i>i'ka:mu'súni'</i>	<i>i'kmu'súj</i>
1PL.INC	–	–	<i>mu'súj</i>
2PL	<i>kila:mu'súj</i>	–	<i>mu'sutít</i>
3PL	<i>kintamu'súlh</i>	<i>tamu'súni'</i>	<i>tamu'súlh</i>
PLURAL OBJECTS			
1SG	–	<i>i'ka:mu'súni'</i>	<i>i'ka:mu'súlh</i>
2SG	<i>kila:mu'súj</i>	–	<i>ka:mú'su'</i>
3SG	<i>kinka:mu'súni'</i>	<i>ka:mu'súni'</i>	<i>ka:mu'súlh</i>
1PL.EXC	–	<i>i'ka:mu'súni'</i>	<i>i'ka:mu'súj</i>
1PL.INC	–	–	<i>ka:mu'súj</i>
2PL	<i>kila:mu'súj</i>	–	<i>ka:mu'sutít</i>
3PL	<i>kinka:tamu'sú:ni'</i>	<i>ka:tamu'súni'</i>	<i>tamu'súlh ~ ka:mu'súlh</i>

Class 1 perfective transitive forms show that the suffix *-lh* appears with verbs that do not have an agreement suffix and take a default perfective reading in those forms that have agreement suffixes and those with second person singular subjects, similar to the intransitive paradigms.

The perfective transitive paradigm for Class 2 (consonant-final) verbs is given in Table 27.

Table 27: Perfective transitive forms, Class 2 (*tuks-* ‘hit’)

SINGULAR OBJECTS			
	1OBJ	2OBJ	3OBJ
1SG	–	<i>i'ktúksni'</i>	<i>i'ktúksli'</i>
2SG	<i>kintúks<i>ti'</i></i>	–	<i>túks<i>ti'</i></i>
3SG	<i>kintúks<i>li'</i></i>	<i>túksni'</i>	<i>túks<i>li'</i></i>
1PL.EXC	–	<i>i'ka:túksni'</i>	<i>i'ktúkswi'</i>
1PL.INC	–	–	<i>túkswi'</i>
2PL	<i>kila:túkswi'</i>	–	<i>tukstít</i>
3PL	<i>kintatúks<i>li'</i></i>	<i>tatúksni'</i>	<i>tatúks<i>li'</i></i>
PLURAL OBJECTS			
1SG	–	<i>i'ka:túksni'</i>	<i>i'ka:túks<i>li'</i></i>
2SG	<i>kila:túkswi'</i>	–	<i>ka:túks<i>ti'</i></i>
3SG	<i>kinka:túksni'</i>	<i>ka:túksni'</i>	<i>ka:túks<i>li'</i></i>
1PL.EXC	–	<i>i'ka:túksni'</i>	<i>i'ka:túkswi'</i>
1PL.INC	–	–	<i>ka:túkswi'</i>
2PL	<i>kila:túkswi'</i>	–	<i>ka:tukstít</i>
3PL	<i>kinka:tatúksni'</i>	<i>ka:tatúksni'</i>	<i>tatúks<i>li'</i></i>

The perfective *-li'* appears on certain verbs that do not have person suffixes, specifically those forms with 1SG.SUB acting on 3SG/PL.OBJ, and 3SUB acting on 1SG.OBJ and 3SG/PL.OBJ. The perfective suffix is *-wi'* (PFV:1PL.SUB) in forms with 1PL.SUB acting on 3SG/PL.OBJ, and 2SUB acting on 1OBJ when one or both (subject or object) are plural. The perfective with second-person singular subjects acting on first-person plural objects (2SG.SUB > 1PL.OBJ), and on third-person singular or plural objects (2SG.SUB > 3SG/PL.OBJ) is marked with *-ti'* (PFV:2SG.SUB) as in the intransitive paradigm. All other forms with a second-person object suffix *-ni'* (2OBJ) and second-person plural subject suffix *-tit* (2PL.SUB) take a default perfective reading with the absence of an overt aspectual marker.

The Class 3 (*n*-final) perfective transitive paradigm is illustrated in Table 28 and resembles the perfective forms of Class 1 verbs.

Table 28: Perfective transitive forms, Class 3 (*laqtzín* ‘see’)

SINGULAR OBJECTS			
	1OBJ	2OBJ	3OBJ
1SG	–	<i>i'klaqtzíni'</i>	<i>i'klaqtzilh</i>
2SG	<i>kilá'qtzi'</i>	–	<i>lá'qtzi'</i>
3SG	<i>kilaqtzilh</i>	<i>laqtzíni'</i>	<i>laqtzilh</i>
1PL.EXC	–	<i>i'ka:laqtzíni'</i>	<i>i'klaqtzíuj</i>
1PL.INC	–	–	<i>laqtzíuj</i>
2PL	<i>kila:laqtzíuj</i>	–	<i>laqtzintít</i>
3PL	<i>kintalaqtzilh</i>	<i>talaqtzíni'</i>	<i>talaqtzilh</i>
PLURAL OBJECTS			
1SG	–	<i>i'ka:laqtzíni'</i>	<i>i'ka:laqtzilh</i>
2SG	<i>kila:laqtzíuj</i>	–	<i>ka:lá'qtzi'</i>
3SG	<i>kinka:laqtzíni'</i>	<i>ka:laqtzíni'</i>	<i>ka:laqtzilh</i>
1PL.EXC	–	<i>i'ka:laqtzíni'</i>	<i>i'ka:laqtzíuj</i>
1PL.INC	–	–	<i>ka:laqtzíuj</i>
2PL	<i>kila:laqtzíuj</i>	–	<i>ka:laqtzintít</i>
3PL	<i>kinka:laqtzíni'</i>	<i>ka:laqtzíni'</i>	<i>talaqtzilh</i>

Class 3 (*n*-final) perfective stems show the most underspecification of all the aspects. All forms that take agreement suffixes take a default perfective reading, in addition to second-person singular subject forms which are marked by penultimate stress and a final short laryngealized vowel. The perfective *-lh* is then found with those forms that do not have agreement suffixes, specifically first-person singular subjects acting on third persons (1SG.SUB > 3SG/PL.OBJ) and forms with third-person singular or plural subjects acting on first-person singular objects or third-person objects (3SG/PL.SUB > 1SG, 3SG/PL.OBJ). These forms are lexicalized to express a default perfective reading at least in elicitations; however, this class is highly irregular and requires a deeper analysis of its functions and uses in context.

Functions of the perfective

The perfective aspect expresses the fact that an event or state of affairs is temporally bounded or completed and is used to report sequences of events as they occur in narratives, as seen in the short excerpt from the Frog Story presented in (595).

(595) *La'qtzi'lh sqá'ta' chi: maklálh i'xwanqén sqá'ta'. Lha:tzá' lé:'li u:'tzá' tu: i'xwanqé:n. Cha:'tintzá' xasqá'ta' le:'lh nai'xchik.*

- (a) *la'qtzi'n-lh* *sqá'ta'* *chi:* *maklá-lh* *i'x-wanqén* *sqá'ta'*
 see-PFV child PTCL find-PFV 3POSS-frog child
- (b) *lha:=tza'* *le:'n-lh=i* *u:'tzá'* *tu:* *i'x-wanqé:n*
 NEG=now take-PFV=JUNCT PRN.3SG NREL 3POSS-frog
- (c) *cha:'-tin=tzá'* *xa-sqá'ta'* *le:'n-lh* *nak=i'x-chik*
 NUM.CLF-one=now DTV-child take-PFV LOC=3POSS-house

‘(a) [The frog] saw the boy when the boy found his frog. (b) The boy did not take the one that was his frog now. (c) The boy took one [of the children] to his house.’
 [FAS: Frog story 41-44]

In the narrative sequence in (595), the speaker uses the perfective aspect to convey the progression of events that occurred one after the other as they happened in the story. In each situation, the event is viewed as a bounded or completed whole driving the sequence of events in the narration forward.

The perfective is also used for events that occurred in the recent past or right before the moment of speech that are viewed as a bounded, completed whole, as in (596)-(597).

(596) *Kakima:sputu:núni' lha: lí:wa i'klhúlh.*

ka-kin-ma:-sput-u:-nun-ni'-Ø *lha: lí:wa* *i'k-lhu-lh*
 OPT-1OBJ-CS-finish-CS-AP-DAT:2SG.SUB-PFV NEG on.purpose 1SG.SUB-do-PFV
 ‘Forgive me, I did not do it on purpose.’ [FAS: Woodchopper 28]

(597) *Qalhti:nín, u:'tzá' lha: paláj i'kli:mílh, wa.*

qalhti:-nín-Ø *u:'tzá'* *lha: paláj* *i'k-li:-min-lh* *wa-Ø*
 respond-AP-IMPF PRN.3SG NEG fast 1SG.SUB-INST-come-PFV say-IMPF
 ‘She responds, that’s why I did not come quickly, she says.’ [FAS: Shopping List 25]

The speaker uses the perfective forms to narrate events that just occurred right before the moment of speech in (596) and in the recent past in (597). The examples used in

(595)-(597) are all overtly marked for the perfective aspect. The unmarked forms of the perfective do not impressionistically appear often in narratives. Since these verbs are irregular and idiosyncratic, further data may illuminate the forms and functions of the perfective.

To summarize this section, perfective aspect expresses bounded and completed affairs and is commonly translated into Spanish using the preterite or simple past. Since perfective marking does not appear in combination with the future tense and it does not seem to combine with the past tense in verb forms in the indicative mood, the perfective is being analyzed as morphologically incompatible with tense inflection altogether — that is, verbs inflected for the past, present, and future tense do not seem to inflect for perfective aspect. Instead, the perfective suffix in combination with the past tense prefix is used idiomatically in the formal expression of the irrealis mood (see §5.2.3.4).

Additionally, the perfective aspect shows the most variety in morphologically determined allomorphy and is the most morphologically underspecified of all the aspects, being marked by the absence of overt morphology in those forms with person suffixes (e.g. first-person plural subjects *-uj*, second-person plural subjects *-tit*, and second-person (singular and plural) objects *-ni'*), and second-person singular subject forms. This pattern suggests that verbs that are unmarked for aspect are lexicalized to take a default perfective reading when at least one member is a second person (singular or plural) participant or a first-person plural participant. In general, the perfective paradigms seem to be highly irregular and better analyzed synthetically as these forms must be learned or memorized by the speaker.

5.2.1.3 *Progressive*

The progressive aspect is semantically a subcategory of the imperfective since the progressive is also used to express states or events that are in progress, continuous, unbounded, or habitual in ZT. Progressive aspectual inflection does not make a distinction between the inflectional classes, being marked in the same way for Class 1, 2 and 3 verb stems. The progressive suffix, *-ma:'*, has grammaticalized from the stative posture verb *ma:'* 'lie' as is cross-linguistically common (see Newman (2002)). The progressive suffix displays the same paradigmatic irregularities exhibited by the lexical posture verb *ma:'* 'lie'

paradigm described in §5.3.2. The progressive intransitive paradigms are presented first followed by the transitive paradigms; some of the functions of the progressive are then discussed.

Progressive dynamic intransitive paradigms

Table 29 illustrates the progressive aspectual paradigm for dynamic intransitive verbs. The progressive suffix in each of the verb forms in the table has been bolded.

Table 29: Dynamic intransitive progressive aspectual paradigms for Class 1, 2a/b, and 3 stems *taxtú* ‘leave’, *pax-* ‘bathe’, *kalhwán* ‘cry’, and *wa’yán* ‘eat_{INTR}’

	Class 1	Class 2a	Class 2b	Class 3
	<i>taxtú</i> ‘leave’	<i>pax-</i> ‘bathe’	<i>kalhwán</i> ‘cry’	<i>wa’yán</i> ‘eat _{INTR} ’
1SG	<i>i'ktaxtumá:'</i>	<i>i'kpaxmá:'</i>	<i>i'kalhwamá:'</i>	<i>i'kwa'yamá:'</i>
2SG	<i>taxtupá:'t</i>	<i>paxpá:'t</i>	<i>kalhwampá:'t</i>	<i>wa'yampá:'t</i>
3SG	<i>taxtumá:'</i>	<i>paxmá:'</i>	<i>kalhwamá:'</i>	<i>wa'yamá:'</i>
1PL.EXC	<i>i'ktaxtuma:'núuj</i>	<i>i'kpaxma:'núuj</i>	<i>i'kalhwama:'núuj</i>	<i>i'kwa'yama:'núuj</i>
1PL.INC	<i>taxtuma:'núuj</i>	<i>paxma:'núuj</i>	<i>kalhwama:'núuj</i>	<i>wa'yama:'núuj</i>
2PL	<i>taxtupa:'na'ntít</i>	<i>paxpa:'na'ntít</i>	<i>kalhwampa:'na'ntít</i>	<i>wa'yampa:'na'ntít</i>
3PL	<i>tataxtuma:'nán</i>	<i>tapaxma:'nán</i>	<i>takalhwama:'nán</i>	<i>tawa'yama:'nán</i>

Table 29 shows that second-person subjects take the suppletive form of the progressive *-ma:'*, which is realized as *-pa:'*. The stative plural morpheme *-nan*, which was presented in §5.1.1 on second-person plural subject marking, appears in the intransitive progressive paradigm for all verb forms with plural subjects, as in (598)-(600).

- (598) *Tataxtuma: 'nán.*
 ta-taxtú-**ma:'**-**nan**
 3PL.SUB-leave-**PROG-ST.PL**
 'They are leaving'
- (599) *Taxtuma: 'náuj.*
 taxtu-**ma:'**-**na**-uj
 leave-**PROG-ST.PL**-1PL.SUB
 'We_{INC} are leaving'
- (600) *Taxtupa: 'na'ntít.*
 taxtú-**pa:'**-**na'n**-tit
 leave-**PROG:2SUB-ST.PL**-2PL.SUB
 'You all are leaving'

The stative plural *-nan* is realized as *-na* (ST.PL) when it appears before the first-person plural subject suffix *-uj*, as in (599), and is more commonly laryngealized before the second person plural suffix *-tit*, as in (600).

Progressive dynamic transitive paradigms

The progressive paradigms for Class 1, 2, and 3 dynamic transitive verbs are illustrated in Table 30 through Table 32.

Table 30: Transitive progressive dynamic paradigm, Class 1 (*mu'sú* ‘kiss’)

SINGULAR OBJECTS			
	1OBJ	2OBJ	3OBJ
1SG	–	<i>i'kmu'sumá:'ni'</i>	<i>i'kmu'sumá:'</i>
2SG	<i>kimu'supá:'t</i>	–	<i>mu'supá:'t</i>
3SG	<i>kimu'sumá:'</i>	<i>mu'sumá:'ni'</i>	<i>mu'sumá:'</i>
1PL.EXC	–	<i>i'ka:mu'sumá:'ni'</i>	<i>i'kmu'suma:'náuj</i>
1PL.INC	–	–	<i>mu'su:ma:'náuj</i>
2PL	<i>kila:mu'suma:'náuj</i>	–	<i>mu'supa:'na'ntít</i>
3PL	<i>kintamu'suma:'nán</i>	<i>tamu'su:má:'ni'</i>	<i>tamu'suma:'nán</i>
PLURAL OBJECTS			
1SG	–	<i>i'ka:mu'sumá:'ni'</i>	<i>i'ka:mu'sumá:'</i>
2SG	<i>kila:mu'suma:'náuj</i>	–	<i>ka:mu'supá:'t</i>
3SG	<i>kinka:mu'sumá:'ni'</i>	<i>ka:mu'sumá:'ni'</i>	<i>ka:mu'sumá:'</i>
1PL.EXC	–	<i>i'ka:mu'sumá:'ni'</i>	<i>i'ka:mu'suma:'náuj</i>
1PL.INC	–	–	<i>ka:mu'suma:'náuj</i>
2PL	<i>kila:mu'suma:'náuj</i>	–	<i>ka:mu'supa:'na'ntít</i>
3PL	<i>kinka:tamu'sumá:'ni'</i>	<i>ka:tamu'sumá:'ni'</i>	<i>tamu'suma:'nán</i>

Table 31: Transitive progressive dynamic paradigm, Class 2 (*tuks-* ‘hit’)

SINGULAR OBJECTS			
	1OBJ	2OBJ	3OBJ
1SG	–	<i>i'ktuksmá:'ni'</i>	<i>i'ktuksmá:'</i>
2SG	<i>kintukspá:'t</i>	–	<i>tukspá:'t</i>
3SG	<i>kintuksmá:'</i>	<i>tuksmá:'ni'</i>	<i>tuksmá:'</i>
1PL.EXC	–	<i>i'ka:tuksmá:'ni'</i>	<i>i'ktuksma:'náuj</i>
1PL.INC	–	–	<i>tuksma:'náuj</i>
2PL	<i>kila:tuksma:'náuj</i>	–	<i>tukspa:'na'ntít</i>
3PL	<i>kintatuksma:'nán</i>	<i>tatuksmá:'ni'</i>	<i>tatuksma:'nán</i>
PLURAL OBJECTS			
1SG	–	<i>i'ka:tuksmá:'ni'</i>	<i>i'ka:tuksmá:'</i>
2SG	<i>kila:tuksma:'náuj</i>	–	<i>ka:tukspá:'t</i>
3SG	<i>kinka:tuksmá:'ni'</i>	<i>ka:tuksmá:'ni'</i>	<i>ka:tuksmá:'</i>
1PL.EXC	–	<i>i'ka:tuksmá:'ni'</i>	<i>i'ka:tuksma:'náuj</i>
1PL.INC	–	–	<i>ka:tuksma:'náuj</i>
2PL	<i>kila:tuksma:'náuj</i>	–	<i>ka:tukspa:'na'ntít</i>
3PL	<i>kinka:tatuksmá:'ni'</i>	<i>ka:tatuksmá:'ni'</i>	<i>tatuksma:'nán</i>

Table 32: Transitive progressive dynamic paradigm, Class 3 (*laqtzín* ‘see’)

SINGULAR OBJECTS			
	1OBJ	2OBJ	3OBJ
1SG	–	<i>i'klaqtzimá:'ni'</i>	<i>i'klaqtzimá:'</i>
2SG	<i>kilaqtzimpá:'t</i>	–	<i>laqtzimpá:'t</i>
3SG	<i>kilaqtzimá:'</i>	<i>laqtzimá:'ni'</i>	<i>laqtzimá:'</i>
1PL.EXC	–	<i>i'ka:laqtzimá:'ni'</i>	<i>i'klaqtzima:'náuj</i>
1PL.INC	–	–	<i>laqtzima:'náuj</i>
2PL	<i>kila:laqtzima:'náuj</i>	–	<i>laqtzimpa:'na'ntít</i>
3PL	<i>kintalaqtzima:'nán</i>	<i>talaqtzimá:'ni'</i>	<i>talaqtzima:'nán</i>
PLURAL OBJECTS			
1SG	–	<i>i'ka:laqtzimá:'ni'</i>	<i>i'ka:laqtzimá:'</i>
2SG	<i>kila:laqtzima:'náuj</i>	–	<i>ka:laqtzimpá:'t</i>
3SG	<i>kinka:laqtzi'má:'ni'</i>	<i>ka:laqtzimá:'ni'</i>	<i>ka:laqtzi'má:'</i>
1PL.EXC	–	<i>i'ka:laqtzi'má:'ni'</i>	<i>i'ka:laqtzima:'náuj</i>
1PL.INC	–	–	<i>ka:laqtzima:'náuj</i>
2PL	<i>kila:laqtzima:'náuj</i>	–	<i>ka:laqtzimpa:'na'ntít</i>
3PL	<i>kinka:talaqtzimá:'ni'</i>	<i>ka:talaqtzimá:'ni'</i>	<i>talaqtzima:'nán</i>

Table 30 through Table 32 show that progressive forms of dynamic transitive verbs are similar to the intransitive forms in that the verb stems make no distinction between the verb classes 1, 2, or 3. The notable difference between the intransitive progressive paradigm and the transitive progressive paradigm is the absence of the stative plural suffix *-nan* in certain forms with plural subjects: 3PL > 1PL, 2SG/PL. This pattern is also found in Apapantilla Totonac (Reid 1991:42–46) and differs from Upper Necaxa where *-nan* occurs in all forms with plural subjects (Beck 2004).²⁹

²⁹ After much prompting, ZT speakers will accept forms that include the stative plural (cf. *tatuksmá:'ni'* ~ *tatuksuma:'nání'* ‘they are hitting you’; *talaqtzimá:'ni'* ~ *talaqtzima:'nán* ‘they are seeing you’) but they did not produce them; for this reason, I think the marking of the stative plural is irregularly marked in these forms and that speakers might not be producing these forms with the stative plural since the marking is redundant.

Functions of the progressive

The progressive aspect is used to express states or events that are in progress at the time of reference, as seen in (601)-(602).

(601) *Kintzi'li'ksni'pá't kima'qspúlh!*

Ø-kin-tzi'li'ks-ni'-**pa:**'-t kin-ma'qspúlh
 PRES-1OBJ-hurt-DAT-**PROG:2SUB**-2SG.SUB 1POSS-finger
 'You are crushing my finger!'

(602) *Kinán i'kpixtli:te:lhayá:uj i'kama:'náuj nakpu:qalhtawá'ka'.*

kinán Ø-i'k-pix-tli:-te:lha-**ya:**-uj
 PRN.1PL PRES-1SG.SUB-neck-dance-AMB-**IMPF**-1PL.SUB

Ø-i'k-a'n-**ma:**'-nan-uj nak=pu:-qalhtawá'ka'
 PRES-1SG.SUB-go-**PROG**-ST.PL-1PL.SUB LOC=CNTR-read:DVB
 'We go along singing while we are going to school.'

Verbs in the progressive aspect denote an event that is occurring at the present moment in (601) and is therefore being analyzed here as, at least, semantically compatible with the present tense. In (602), the progressive refers to an event that is in progress at the same time as another ongoing event expressed in the present imperfective.

The progressive aspect readily combines with verbs that express states, as in (603)-(605). Note that even though these verbs have stative meanings, they formally belong to the class of dynamic verbs because of their potential to take the variety of aspectual inflections.

(603) *Ponqx, i'ktojó:li nakxká:n e:' chu:wáj i'klonqmá:'.*

ponqx i'k-tojó:-lh=i nak=xká:n e:'
 splash 1SG.SUB-be.immersed-PFV≡JUNCT LOC=water and

chu:wáj Ø-i'k-lonq-**ma:**'
 now PRES-1SG.SUB-be.cold-**PROG**
 'Splash, I fell in the water, and now I am cold.' [FAS: Woodchopper 24-25]

(604) *Chu:wáj lha:tzá' tu: a'namá:' li:púj.*

chu:wáj lha:=tzá' tu: Ø-a'nan-**ma:**' li:púj
 now NEG=now NREL PRES-exist-**PROG** sad
 'Now there is no sadness.' [MCC: Story of Past 7]

- (605) *I'kle:a'katuyujmá:' tu: chu: nakwá'.*
 Ø-i'k-li:-a'katuyúj-**ma:'** tu: chu: na-i'k-wa'-Ø
 PRES -1SG.SUB-INST-worry-**PROG** NREL PTCL FUT-1SG.SUB-eat-IMP
 'I am worrying about what I am going to eat.' [RVA: Cuentos 91]

This combination of the progressive aspect with stative predicates is cross-linguistically unusual (Comrie 1976). Bybee et al. (1994:126) claim that since states “continue without further energy input unless something occurs to put an end to them,” the progressive aspect more typically combines with verbs expressing actions that require constant energy to be sustained, but that does not seem to be the case in (603)-(605). However, the progressive aspect does not seem to combine with the subclass of verbs formally classified as “regular stative” or “posture stative” verbs in ZT unless they are derived into dynamic stems with the inchoative or causative prefixes (see §5.3).

The progressive *-ma:'* is also used to refer to ongoing states or events that have a habitual reading, as seen in (606)-(607).

- (606) *Ti:' a'nú' ka:wá' lakstín xka:laqmaqe:'qlhamá:'.*
 ti: a'nú' Ø-ka:-wa'-Ø lakstín i'x-ka:-laq-maqe:'qlhá-**ma:'**
 HREL over.there PRES-PL.OBJ-eat-IMP children PST-PL.OBJ-INTNS-scare-**PROG**
 'The one over there who eats the children used to go around scaring them.' [MCC:
 Witch Story 2]

- (607) *Mat tzi:'sa xtaskujma:'nán ti:x talhuma:'nán.*
 mat tzi:'sa i'x-ta-skuj-**ma:'**-nan ti:
 QTV night PST-3PL.SUB-work-**PROG**-ST.PL HREL

i'x-ta-lhu-*ma:'*-nan
PST-3PL.SUB-do-*PROG*-ST.PL
 'It's said those who were doing (the construction) were working at night.' [SLO:
 Cuentos 141]

The verbal predicate in the past progressive in (606) expresses the idea that the relativized subject *ti: ka:wá' lakstín* ‘the one who eats children’ partook in repeated events of scaring the children in the past. Both the relativized subject *ti: i'xtalhuma:'nán* ‘those who were doing it’ and the verbal predicate complement *i'xtaskujma:'nán* ‘they were working’ in (607) have past habitual readings. Similarly, in (608)-(609), the speaker uses the progressive to talk about the recurring habits of a snake that would eat all the animals.

(608) *E:' pus ma:ntzá' xti'yamá:' i'xwa'má:'.* Choj mat chi: i'xma:pi:n i'xkilhlukút lha: i'xwí:n.

- (a) e:' pus ma:ntzá' **i'x-ti'yá-ma:'** **i'x-wa'-ma:'**
 and well only=now PST-grab-PROG PST-eat-PROG
- (b) choj mat chi: i'x-ma:pi:-Ø≡n i'x-kilh-lukút
 now QTV PTCL PST-lay.out-IMP≡JUNCT 3POSS-mouth-bone
- (c) lha: i'x-wi:≡n
 where PST-sit≡JUNCT

‘(a) And well (the snake) used to only grab and eat. (b) Now they say (the snake) used to leave its bones (c) where it lived.’ [Story of Community 10-11]

(609) *Wa'chí' wa'chí' matí'x laqtzanqa:ma:'.*

- wa'chí' wa'chí' mat **i'x-laq-tzanqá:-ma:'**
 like.this like.this QTV PST-INTNS-lost-PROG
 ‘Like this, they say (the snake) used to get lost.’ [Story of Community 12]

The progressive is further found in combination with the perfective form of the indefinite subject suffix discussed in §5.4.1, as shown in (610)-(611).

(610) *Li:mimá:'ka' xku't.* *Li:mimá:'ka' mapachí:n.* *Li:mimá:'ka' kuyuj.*

li:-min-**ma:'-ka'** xku't li:-min-**ma:'-ka'** mapachí:n
 INST-come-PROG-IDF:PFV badger INST-come-PROG-IDF:PFV raccoon

li:-min-**ma:'-ka'** kuyuj
 INST-come-PROG-IDF:PFV armadillo
 ‘They brought badgers. They brought raccoons. They brought armadillos.’
 [RVA: Cuentos 49-51]

(611) *Lakatzunáj tzu'tzunumá:'ka'.*

laka-tzunáj tzu'tzú-**nun-ma:'-ka'**
 face-close suck-AP-PROG-IDF:PFV
 ‘Someone was smoking close by.’

The speaker in (610) uses the portmanteau *-ka'* (the perfective form of the indefinite subject) to narrate a sequence of bounded events in combination with the progressive to express the idea that these were recurring events in the past. The progressive with the perfective in (611) depicts the totality of a smoking event that unfolded over time but is

now finished and completed. In these examples (610)-(611), the indefinite subject marker conveys an action performed by a generic or indefinite AGENT similar to *someone* or the impersonal *they* in English (cf. §5.4.1). The antipassive in (611) attributes an activity-like reading to the predicate (cf. §5.4.2). The progressive *-ma:'* only appears combined with the perfective form of the indefinite subject marker in the ZT database but it does not appear in combination with any other aspects.

In sum, the progressive aspect, similar to the imperfective, refers to events that are unbounded and habitual, although the progressive is additionally used to denote that an event is in progress, ongoing, or repeated. The progressive suffix *-ma:'* is grammaticalized from the stative posture verb *ma:'* 'lie'. The suffix is marked fairly regularly with the exception of verbs inflected for second-person subjects which take a suppletive progressive form that is similarly found with the posture verb *ma:'* in second-person forms. Progressive aspect combines with the past tense and semantically expresses states or events that are occurring at the present moment or time of speech and is therefore analyzed as compatible with present tense inflection. It is so far the only aspect that is found in combination with other aspects, particularly the perfective form of the verb, where it refers to recurring or enduring events that have been completed.

5.2.1.4 Perfect

The perfect in the Totonacan linguistic literature has been traditionally described as an aspect, however, semantically it functions like a complex tense. For this reason, I refer to the perfect as the morphological perfect since following the Totonacan linguistic tradition, the perfect is treated as an aspect based on morphological criteria as it patterns with other aspectual suffixes appearing in the position before person suffixes. Perfect aspect in ZT indicates the relation between two reference points or events in time, one of which occurs before another subsequent event in the present or in the past. The perfect aspect is marked by the full form of the suffix *-ni:'tan*, which has as allomorphs *-ni:'ta* and *-ni:'t*. The intransitive paradigms of the morphological perfect are presented first followed by the transitive paradigms. The paradigms show that the perfect aspect is consistently marked across all dynamic verb classes (as opposed to other aspects, like the imperfective and perfective which vary depending on the class of the verb). Finally, some of the possible

functions of the morphological perfect are illustrated.

Perfect dynamic intransitive paradigms

The perfect does not make any distinctions between inflectional verb classes as demonstrated by the consistency across the intransitive stems in Table 33. In the table, the perfect suffix has been highlighted in bold.

Table 33: Aspectual paradigms perfect intransitive dynamic verbs for Class 1, 2a/b, and 3 stems *taxtú* ‘leave’, *pax-* ‘bathe’, *kalhwán* ‘cry’, and *wa’yán* ‘eat_{INTR}’

	Class 1	Class 2a	Class 2b	Class 3
	<i>taxtú</i> ‘leave’	<i>pax-</i> ‘bathe’	<i>kalhwán</i> ‘cry’	<i>wa’yán</i> ‘eat _{INTR} ’
1SG	<i>i'ktaxtuni:'t</i>	<i>i'kpaxni:'t</i>	<i>i'kalhwani:'t</i>	<i>i'kwa'yani:'t</i>
2SG	<i>taxtuni:'ta'</i>	<i>paxni:'ta'</i>	<i>kalhwani:'ta'</i>	<i>wa'yani:'ta'</i>
3SG	<i>taxtuni:'t</i>	<i>paxni:'t</i>	<i>kalhwani:'t</i>	<i>wa'yani:'t</i>
1PL.EXC	<i>i'ktaxtuni:'táuj</i>	<i>i'kpaxni:'táuj</i>	<i>i'kalhwani:'táuj</i>	<i>i'kwa'yani:'táuj</i>
1PL.INC	<i>taxtuni:'táuj</i>	<i>paxni:'táuj</i>	<i>kalhwani:'táuj</i>	<i>wa'yani:'táuj</i>
2PL	<i>taxtuni:'tantít</i>	<i>paxni:'tantít</i>	<i>kalhwani:'tantít</i>	<i>wa'yani:'tantít</i>
3PL	<i>tataxtuni:'t</i>	<i>tapaxni:'t</i>	<i>takalhwani:'t</i>	<i>tawa'yani:'t</i>

The full form of the perfect aspectual suffix — that is, the form with the most phonological material — is *-ni:'tan* and is only found in those forms with the second-person plural subject suffix *-tit* (2PL.SUB), as in (612).

(612) *Taxtuni:'tantít.*

taxtú–**ni:'tan**–tit
 leave–PF–2PL.SUB
 ‘You all have left’

Forms with a first-person plural subject suffix *-uj* (1PL.SUB) take a reduced form of the perfect, namely *-ni:'ta*, as seen in (613)-(614).

(613) *Taxtuni: 'táuj.*
taxtú–**ni: 'ta**–uj
leave–PF–1PL.SUB
'We_{INC} have left'

(614) *Wa'yani: 'táuj.*
wa'yán–**ni: 'ta**–uj
eat–PF–1PL.SUB
'We_{INC} have eaten'

The reduced form of the perfect *-ni: 'ta* is also found with second-person singular subjects. With second-person singular subjects, the suffix *-ni: 'ta* exhibits penultimate stress and a final short laryngealized vowel, as is common with second-person singular subjects (see §5.1.1). This suffix is analyzed here as a portmanteau, as seen in (615)-(616).

(615) *Taxtuni: 'ta'.*
taxtú–**ni: 'ta'**
leave–PF:2SG.SUB
'You have left'

(616) *Wa'yani: 'ta'.*
wa'yán–**ni: 'ta'**
eat–PF:2SG.SUB
'You have eaten'

Finally, verb forms that do not end in person markers (1SG and 3SG/PL subjects) take *-ni: 't* as the truncated form of the perfect suffix, as seen in (617)-(619).

(617) *Taxtuni: 't.*
Ø–taxtú–**ni: 't**
3SG.SUB–leave–PF
'S/he has left'

(618) *Tapaxni: 't.*
ta–pax–**ni: 't**
3PL.SUB–bathe–PF
'They have bathed'

(619) *I'kwa'yani: 't.*
i'k–wa'yán–**ni: 't**
1SG.SUB–eat–PF
'I have eaten'

Perfect dynamic transitive paradigms

Transitive verbs in the perfect aspect use the same set of suffixes for all three inflectional classes, as shown in Table 34 through Table 36, similar to what we just observed for intransitive verbs across all three class paradigms.

Table 34: Perfect dynamic transitive forms, Class 1 (*mu'sú* ‘kiss’)

SINGULAR OBJECTS			
	1OBJ	2OBJ	3OBJ
1SG	–	<i>i'kmu'suni:'táni'</i>	<i>i'kmu'suní:'t</i>
2SG	<i>kimu'suní:'ta'</i>	–	<i>mu'suní:'ta'</i>
3SG	<i>kimu'suní:'t</i>	<i>mu'suni:'táni'</i>	<i>mu'suní:'t</i>
1PL.EXC	–	<i>i'ka:mu'suni:'táni'</i>	<i>i'kmu'suni:'táuj</i>
1PL.INC	–	–	<i>mu'su:ni:'táuj</i>
2PL	<i>kilamu'suni:'táuj</i>	–	<i>mu'suni:'tantít</i>
3PL	<i>kintamu'suní:'t</i>	<i>tamu'suni:'táni'</i>	<i>tamu'suní:'t</i>
PLURAL OBJECTS			
1SG	–	<i>i'ka:mu'suni:'táni'</i>	<i>i'ka:mu'suní:'t</i>
2SG	<i>kila:mu'suni:'táuj</i>	–	<i>ka:mu'suní:'ta'</i>
3SG	<i>kinka:mu'suni:'táni'</i>	<i>ka:mu'suni:'táni'</i>	<i>ka:mu'suní:'t</i>
1PL.EXC	–	<i>i'ka:mu'suni:'táni'</i>	<i>i'ka:mu'suni:'táuj</i>
1PL.INC	–	–	<i>ka:mu'suni:'táuj</i>
2PL	<i>kila:mu'suni:'táuj</i>	–	<i>ka:mu'suni:'tantít</i>
3PL	<i>kinka:tamu'suni:'táni'</i>	<i>ka:tamu'suni:'táni'</i>	<i>ka:mu'suní:'t</i>

Table 35: Perfect dynamic transitive forms, Class 2 (*tuks-* ‘hit’)

SINGULAR OBJECTS			
	1OBJ	2OBJ	3OBJ
1SG	–	<i>i'ktuksni:'táni'</i>	<i>i'ktuksni:'t</i>
2SG	<i>kintuksni:'ta'</i>	–	<i>tuksni:'ta'</i>
3SG	<i>kintuksni:'t</i>	<i>tuksni:'táni'</i>	<i>tuksni:'t</i>
1PL.EXC	–	<i>i'ka:tuksni:'táni'</i>	<i>i'ktuksni:táuj</i>
1PL.INC	–	–	<i>tuksni:táuj</i>
2PL	<i>kila:tuksni:'táuj</i>	–	<i>tuksni:'tantít</i>
3PL	<i>kintatuksni:'t</i>	<i>tatuksni:táni'</i>	<i>tatuksni:'t</i>
PLURAL OBJECTS			
1SG	–	<i>i'ka:tuksni:'táni'</i>	<i>i'ka:tuksni:'t</i>
2SG	<i>kila:tuksni:'táuj</i>	–	<i>ka:tuksni:'ta'</i>
3SG	<i>kinka:tuksni:'táni'</i>	<i>ka:tuksni:'táni'</i>	<i>ka:tuksni:'t</i>
1PL.EXC	–	<i>i'ka:tuksni:'táni'</i>	<i>i'ka:tuksni:'táuj</i>
1PL.INC	–	–	<i>ka:tuksni:'táuj</i>
2PL	<i>kila:tuksni:'táuj</i>	–	<i>ka:tuksni:'tantít</i>
3PL	<i>kinka:tatuksni:'tá'ni'</i>	<i>ka:tatuksni:'táni'</i>	<i>tatuksni:'t</i> ~ <i>ka:tuksni:'t</i>

Table 36: Perfect dynamic transitive forms, Class 3 (*laqtzín* ‘see’)

SINGULAR OBJECTS			
	1OBJ	2OBJ	3OBJ
1SG	–	<i>i'klaqtzini:'táni'</i>	<i>i'klaqtzini:'t</i>
2SG	<i>kilaqtzini:'ta'</i>	–	<i>laqtzini:'ta'</i>
3SG	<i>kilaqtzini:'t</i>	<i>laqtzini:'táni'</i>	<i>laqtzini:'t</i>
1PL.EXC	–	<i>i'ka:laqtzini:'táni'</i>	<i>i'klaqtzini:'táuj</i>
1PL.INC	–	–	<i>laqtzini:'táuj</i>
2PL	<i>kila:laqtzini:'táuj</i>	–	<i>laqtzini:'tantít</i>
3PL	<i>kintalaqtzini:'t</i>	<i>talaqtzini:'tani'</i>	<i>talaqtzini:'t</i>
PLURAL OBJECTS			
1SG	–	<i>i'ka:laqtzini:'táni'</i>	<i>i'ka:laqtzini:'t</i>
2SG	<i>kila:laqtzini:'táuj</i>	–	<i>ka:laqtzini:'ta'</i>
3SG	<i>kinka:laqtzini:'táni'</i>	<i>ka:laqtzini:'táni'</i>	<i>ka:laqtzini:'t</i>
1PL.EXC	–	<i>i'ka:laqtzini:'táni'</i>	<i>i'ka:laqtzini:'táuj</i>
1PL.INC	–	–	<i>ka:laqtzini:'táuj</i>
2PL	<i>kila:laqtzini:'táuj</i>	–	<i>ka:laqtzini:'tantít</i>
3PL	<i>kinka:talaqtzini:'táni'</i>	<i>ka:talaqtzini:'táni'</i>	<i>talaqtzini:'t</i>

Table 34 through Table 36 show that those forms with a second-person suffix also take the reduced form *-ni:'ta* (PF), similarly to those forms with agreement suffixes in the intransitive paradigm. The variation in perfect suffixes might be motivated through the patterns of participant marking instead of morphophonemic variation: where those forms which are marked for at least one second-person participant (subject or object) or a first person plural subject take the full *-ni:tan* or partial form of the perfect suffix *-ni:ta* (PF); all other forms take the shorter form of the suffix *-ni:'t* (PF).

Functions of the perfect

While the morphological perfect is being categorized here as an aspect following the Totonacan literature, the morphological perfect functions more like a complex tense which relates two different reference points in time. The morphological perfect in ZT refers to

events or situations that occurred prior to the time of reference and which has relevance to the time of reference, as shown in (620)-(622).

(620) *Kit kinta:tá' i'xcha'ní:t cha'nkát. I'xchi'tnín i'xtlawá conserva.*

kit kin-ta:tá' i'x-cha'n-**ni:t** cha'nkát
PRN.1SG 1POSS-father PST-plant-PF sugarcane

i'x-chi't-nin-Ø i'x-tlawá-Ø conserva
PST-mill-AP-IMPF PST-make-IMPF preserves

‘My father and I had planted sugarcane. He used to mill (the sugarcane) and make preserves.’ [RVA: Cuentos 31-32]

(621) *E:' la'qtzili xwanqén lha:tzá' tojo:má:' lha: i'xmojo:ní:t.*

e:' la'qtzín-lh=i i'x-wanqén lha:=tzá' Ø-tojo:-ma:'
and see-PFV=JUNCT 3POSS-frog NEG=now PRES-inside-PROG

lha: i'x-mojo:-**ni:t**
where PST-put.down-PF

‘And he saw his frog was not inside where he had put it.’ [FAS: Frog Story 5]

(622) *Tza:'lani:'tzá' i'xwanqén. Sej pu'tzálh.*

Ø-tza:'la-**ni:t**=tzá' i'x-wanqén sej pu'tzá-lh
PRES-flee-PF=now 3POSS-frog much look-PFV

‘His frog has already escaped; he looked for it a lot.’ [FAS: Frog Story 6]

The verbal predicate in the perfect in (620) expresses an event that occurred in the past, namely the planting of sugarcane, which is relevant to another unbounded or habitual event in the past of having to prepare and preserve the sugarcane themselves, since there was no miller in the community at that time. In the excerpt from the Frog Story in (621), the perfect form of the verb, *i'xmojo:ní:t* ‘he had put it down,’ expresses an event that had already been accomplished prior to the boy’s realization of his frog’s disappearance. The perfect form of the verbal predicate in (622) expresses an event that has already occurred, namely, the frog’s escape which has present relevance in that the boy is now left with the task of finding it.

The perfect expresses a past event whose outcome continues into the present moment, as seen in (623) or is relevant to the present discourse, as shown in (624)-(625).

(623) *Maqa:stzá' lha: tu: i'xa'nán tu: i'xwa'kán. Ma'qtín ka:'taxkamaní:n li:stakani:'t.*
 maqa:s=tzá' lha: tu: i'x-a'nán-Ø tu: i'x-wa'-kan-Ø
 long.ago=now NEG PTCL PST-exist-IMPF NREL PST-eat-IDF-IMPF

maq-tín ka:'-taxkamaní:n Ø-li:-stak-kan-**ni:'t**
 NUM.CLF-one PLC-pauper PRES-INST-grow-IDF-PF

'A long time ago, there was nothing that people could eat; people have grown up in poverty.' [MCC: Story of Past 1-2]

(624) *Wa:má:' tachiwini tu: wan nakwán u:'tzá'n tu:n ka:'xwili:ní:'ti wa:má:' i'xká:n sipéj.*
lha: ma:pa:kwika' Zihuateutla

wa:má:' tachiwín=i tu: wan na-i'k-wan u:'tzá'=n
 this story=JNCT NREL say FUT-1SG.SUB-say PRN.3SG=JNCT

tu:=n Ø-ka:'x-wilí:-**ni:'t**=i wa:má:' i'x-xka:n sipéj
 NREL=JNCT PRES-prepared-put-PF=JNCT this 3POSS-water mountain

lha: ma:pa:kwí-ka' Zihuateutla
 where call.by.name-IDF:PFV Zihuateutla

'This story that I'm going to tell is about what has formed the water on this mountain in the place that is called Zihuateutla.' [Story of community 1-3]

(625) *Wa:má:' ka:'lakchikni' maqa:stzá' sta'ki:ní:'t.*

wa:má:' ka:'-lak-chik-ni' maqa:s=tzá' Ø-sta'ki:-**ni:'t**
 this PLC-INTNS-house-PL long.ago=now PRES-grow-PF

'This village has grown since then.' [Story of community 56]

In the excerpt from the personal narrative in (623), the speaker uses the perfect form to describe how things were in the past relative to the standard of living at the present (as she continues to describe in the story). In (624), the speaker is setting up the discourse and uses the perfect to refer to a past situation. The example in (625) similarly expresses a past situation that has present relevance; the community is now populated as a result of people moving to Zihuateutla when water was found on the mountain long ago. The examples in (620)-(625) further show that the morphological perfect combines with the present and past tenses.

In summary, morphologically the perfect is categorized as an aspect since it appears in the same position as other aspectual suffixes. Semantically, however, the perfect functions as a complex tense denoting the relation between two time points: one event that occurred in the past relative to another past event, or one event in the past that has present relevance. While the marking of the perfect is more regular than other aspectual inflections, the

paradigms still show variability and morphologically determined allomorphy that may be better described lexically through person-marking.

To summarize this section on aspect, dynamic verbs in ZT potentially inflect for four aspects: imperfective, perfective, progressive, and morphological perfect, all of which show some amount of morphologically or lexically determined allomorphic variation. The two major aspectual inflections are the imperfective and the perfective, both of which show a considerable amount of irregularity across the verb classes as well as underspecification across the agreement paradigm. Unlike verb agreement where underspecification results in ambiguity in participant marking outside of context, zero-marked aspectual forms are not ambiguous. As seen from the verb paradigms in §5.2.1.1 and §5.2.1.2, these lexical items have been lexicalized, the patterns of which differ depending on the class and person and number of participants involved. Where imperfective marking is overt in one paradigm for some verb classes, it is unmarked in the perfective paradigm (and vice versa), resulting in lexical items that unambiguously differ in form. While the present analysis suggest an analytical explanation to the variability – that is that the verb word consists of distinct morphemes each of which contribute a layer of meaning – these forms might more generally be described by patterns of participant marking and analyzed as units or constructions that are lexically determined. Progressive aspect, which may be thought of as semantically a subcategory of the imperfective as in Comrie (1976: 25) is more regularly and overtly marked for all verb classes and is the only aspect that seems to combine with other aspects, specifically the perfective. Finally, while the morphological perfect functions as a complex tense locating two separate situations on the timeline, it is analyzed as an aspect following the Totonacan linguistic tradition based on its morphological distribution as a suffix appearing in the same position as other aspectual markers. The next section presents the potential for verbs to be marked for tense in ZT and some of the ways tense and aspect might combine.

5.2.2 Tense

Tense is the grammatical category that expresses “location in time” of the situation denoted by the verb (Comrie 1985: 9). Locating a state or event in time can be relative to the present

moment marked by the time of speech or it can be relative to some other reference point depicted in the discourse. In this respect, ZT has relative tense in that a situation can be located in time relative to some other reference point other than the moment of speaking. Verb stems in ZT exhibit inflection for three tenses: present, past, and future. The present is marked by the absence of tense morphology on the verb, the past tense is marked with the prefix *i'x-* and the future with the prefix *na-*. The morphological perfect is also considered a complex tense in ZT although this was described under aspectual inflections following the Totonacan linguistic literature (see §5.2.1.4). Tense marking is illustrated in Table 37 with the verb *taxtú* ‘leave’ in the indicative mood of the imperfective aspect. The tense prefixes have been highlighted in bold. The allomorphic variation that is found when the past and future tense combine with the first person singular subject prefix *i'k-* is described below in the section on the past tense §5.2.2.2 and future tense §5.2.2.3.

Table 37: Present, past, and future tense (*taxtú* ‘leave’)

	Present	Past	Future
1SG	<i>i'ktaxtú</i>	<i>xa'ktaxtú</i>	<i>naktaxtú</i>
2SG	<i>taxtúya'</i>	<i>i'xtaxtúya'</i>	<i>nataxtúya'</i>
3SG	<i>taxtú</i>	<i>i'xtaxtú</i>	<i>nataxtú</i>
1PL.EXC	<i>i'ktaxtuyá:uj</i>	<i>xa'ktaxtuyá:uj</i>	<i>naktaxtuyá:uj</i>
1PL.INCL	<i>taxtuyá:uj</i>	<i>i'xtaxtuyá:uj</i>	<i>nataxtuyá:uj</i>
2PL	<i>taxtuya:'tít</i>	<i>i'xtaxtuya:'tít</i>	<i>nataxtuya:'tít</i>
3PL	<i>tataxtú</i>	<i>i'xtataxtú</i>	<i>natataxtú</i>

As described in §5.2, tense and aspect interact in particular ways — the attested possible combinations being summarized in Table 38.

Table 38: Possible combinations of tense and aspectual morphology

	Imperfective	Perfective	Progressive	Perfect
Present	✓	×	✓	✓
Past	✓	×	✓	✓
Future	✓	×	×	×

Besides some formal restrictions on the combination of tense and aspect in the language, Table 38 suggests that there may be some semantically driven patterns. Present and past tense inflection, for instance, combine with the imperfective and progressive aspects indicating that events in the present and past can be viewed as unbounded, ongoing, continuous, or habitual and may serve as a background for which other events (bounded or unbounded) may take place. By contrast, past or present situations in the imperfective and progressive aspects can be interrupted by other events that are situated relative to the time of the unbounded or ongoing event. Future tense marking, however, is only compatible with the imperfective aspect, which may indicate that since future situations are unactualized or unrealized states of affairs, they are viewed as unbounded and incomplete.

While tense and aspect combine in semantically and morphologically complex manners, there are some generalizations that may be further made. The past tense, for instance, is not found in combination with the perfective aspect in the indicative mood in the ZT database. Since the perfective is used to narrate sequences of completed events, its function is similar to that of the past tense. Rather, the past tense may be used to locate a situation at a certain point in the past while the perfective may be used as a means of moving the story or discourse along by referencing a sequence of events or individual episodes that contribute to the whole situation. While past tense and perfective aspect do not seem to combine morphologically in verb forms in the indicative mood, the two systems work closely together in discourse and narratives. The morphological incompatibility of the past and perfective in the indicative mood may be a grammatical restriction in the language since the past tense prefix combines with the perfective suffix somewhat idiomatically in the formal expression of the irrealis mood (cf. §5.2.3.4). Moreover, future and past tenses are not found in the database with perfective marking. Present tense, which is the unmarked form, seems to involve situations that are happening at the moment of speech or habitual

affairs and might not combine with the perfective either. Finally, the morphological perfect only combines with the present and past tenses to denote a situation in the past relative to another past or present event.

The following sub-sections describe the forms and functions of the three tenses in ZT: present (see §5.2.2.1), past (see §5.2.2.2), and future (see §5.2.2.3). The description illustrates some of their combinatorial potential with aspectual inflection. While some tense and aspect markers might not morphologically combine as seen in Table 38, the two systems of tense and aspect work together in complex ways that are beyond the scope of this dissertation. The marking of the present tense with a zero-affix is used only in this section for heuristic purposes. The tense and aspect affixes relevant to the discussion in each section has been highlighted in bold in the morphological gloss.

5.2.2.1 Present

The present tense refers to a state or event that is happening at the moment of speech or events that are believed to be true, and is marked by the absence of an overt tense marker (represented here with a zero morpheme), as seen in (626)-(628).

(626) *Tzamá: San Manuel ka'tzi:niyá:. Lakapa:sta'knayá:. Qa'lhí: i'xpoder.*

tzamá: San Manuel **Ø**-ka'tzi:-nin-ya:
that San Manuel **PRES**-know-AP-**IMPF**

Ø-laka-pa:stá'k-nan-ya: **Ø**-qa'lhí:-**Ø** i'x-poder
PRES-face-think-AP-**IMPF** **PRES**-have-**IMPF** 3POSS-power
'...that San Manuel knows and he thinks; he has power.' [SLO: Cuentos 72]

(627) *Min kilaqxtaját kúma chu:wáj i'klaqtzima:'tzá' chu:wáj tapala:xlanán.*

Ø-min-**Ø** kin-laqxtaját kúma chu:wáj
PRES-come-**IMPF** 1POSS-tears because now

Ø-i'k-laqtzin-**ma:'**=tzá' chu:wáj **Ø**-tapala:xla-nan-**Ø**
PRES-1SG.SUB-see-**PROG**=now now **PRES**-get.expensive-AP-**IMPF**
'My tears come out because now I am seeing that everything is getting expensive.'
[RVA: Cuentos: 58]

(628) *Tza:'lani:'tzá' i'xwenqén. Sej pu'tzá'lh.*

Ø-tza:'la-**ni:'t**=tzá' i'x-wenqén sej pu'tzá'-lh
PRES-flee-**PF**=now 3POSS-frog much look-PFV

'His frog has already escaped; he looked for it a lot.' [FAS: Frog story 6-7]

The clauses in (626)-(628) express situations that are happening in the moment of speaking, and current states of affairs or general truths that are believed to be the case according to the speaker at the time of speech. The example in (626) shows that the present tense semantically combines with the imperfective to denote a present habitual state of affairs. In (627), the imperfective combines with the progressive to refer to a state or event that is ongoing at the present moment and perceived to be true. In (628), the imperfective combines with the perfect to denote an event that has present relevance. The present tense does not seem to semantically combine with the perfective as this aspect is used to denote completed events giving them a sense of past time.

5.2.2.2 Past

The past tense prefix *i'x-* is used to refer to events that occur in past time relative to the moment of speaking. The past tense morpheme has several allomorphs, optionally realized as *x-* before approximants, vowels, and stop consonants, as shown in (629)-(630). The lexical item bearing the past tense prefix has been bolded in the orthographic line to highlight the pattern described.

(629) *Xwi: cha:'tín slulúk i'xwanikán Jesus.*

i'x -wi:	cha:'-tín	slulúk	i'x -waní-kan-Ø	Jesus
PST-sit	NUM.CLF-one	lizard	PST-say-IDF-IMPF	Jesus

'There was once a lizard named Jesus.' [RLP: Chameleon: 1]

(630) *Kwa i'lhkititnín lha: **xlakapalá** a'kxníka **xtapalí**: i'xmákni'.*

Ø-i'k-wa-Ø	i'x-lhkitit-nin-Ø	lha:	i'x -lakapalá-Ø
PRES-1SG.SUB-say-IMPF	PST-lazy-AP-IMPF	NEG	PST-hurry-IMPF

a'kxníka	i'x -tapalí:-Ø	i'x-mákni'
when	PST-change-IMPF	3POSS-body

'I say, he was lazy and would not hurry to change his body.' [RLP: Chameleon 3]

The past tense prefix also has as an allomorph *xa-* when combining with verb forms with the first-person subject prefix *i'k-*, as seen in (631).

(631) *Xánka' chi: xa'kwa'yán xánka' tu: chu: ...*

xánka' chi: **xa**-i'k-wa'yán-Ø xánka' tu: chu:
 well PCTL **PST**-1SUB-eat-**IMPF** well PTCL PTCL
 'I ate well, well what...' [RVA: Cuentos 39]

For some speakers, the past prefix *i'x-* may also surface as *x-* when combined with the first-person prefix *i'k-*, as in (632).

(632) *E:' a'ntzá xi'kta:'lawí: qa'tla:tús kintzi:'t xwaní:'t.*

e:' a'ntzá **i'x**-i'k-ta:'-lawí:-Ø qa'tla:tús kin-tzi:'t
 and over.there **PST**-1SG.SUB-CMT-live-**IMPF** little.while 1POSS-mother

i'x-wan-ni:'t

PST-be-PF

'and I lived over there for a little while together with my mother when she had been alive.' [SLO: Cuentos: 26]

The prefix *i'x-* is reduced to *i'-* before a fricative, as shown in (633)-(634).

(633) *Xánka' i'skúja kinta:tá'. I'skúja kintzi:'t.*

xánka' **i'x**-skuj-a kin-ta:tá' **i'x**-skuj-a kin-tzi:'t
 well **PST**-work-**IMPF** 1POSS-father **PST**-work-**IMPF** 1POSS-mother
 'My father used to work well; my mother used to work well.' [RVA: Cuentos: 37]

(634) *Kwa i'lhkititnín. Lha: xlakapalá a'kxníka xtapalí: i'xmákni'.*

Ø-i'k-wa-Ø **i'x**-lhkitít-nin-Ø lha: i'x-lakapalá-Ø
 PRES-1SG.SUB-say-**IMPF** **PST**-lazy-AP-**IMPF** NEG **PST**-hurry-**IMPF**

a'kxníka i'x-tapalí:-Ø i'x-mákni'

when **PST**-change-**IMPF** 3POSS-body

'I say, he was lazy and would not hurry to change his body.' [RPL: Chameleon 3]

In fast speech, the past tense marker *i'x-* may move leftward and appears as an enclitic in the form of *-x* on vowel-final particles preceding the verb stem (also described in §2.3.3), as exemplified in (635)-(636).

(635) *Nu:n ti:'x a'nán. Tu:n pu:lanankáni a'náli: wa:má:'.*
 nu:n ti: i'x-a'nán-Ø tu:≡n pu:lanán-kan≡i
 no PTCL PST-exist-IMPF REL≡JUNCT habitat-PL.POSS≡JUNCT
 a'nán-lh≡i: wa:má:'
 exist-PFV≡JUNCT this
 'Nobody was here; what was here first was this.' [Story of community: 6]

(636) *Mat tzi:'sa xtaskujma:'nán ti:x tatlo:ma:'nán.*
 mat tzi:'sa i'x-ta-skuj-ma:'-nan
 QTV night PST-3PL.SUB-work-PROG-ST.PL
 ti: i'x-ta-tlo:-ma:'-nan
 HREL PST-3PL.SUB-do-PROG-ST.PL
 'It's said those who were doing (the construction) were working at night.' [SLO: Cuentos 141]

In terms of function, verb forms encoded with past tense inflection express the fact that a state of affairs is located in past time, as shown in (637)-(639).

(637) *Xánka' i'skúja kinta:tá'. I'skúja kintzi:'t.*
 xánka' i'x-skuj-a kin-ta:tá' i'x-skuj-a kin-tzi:'t
 well PST-work-IMPF 1POSS-father PST-work-IMPF 1POSS-mother
 'My father used to work well; my mother used to work well.' [RVA: Cuentos: 37]

(638) *Mat tzi:'sa xtaskujma:'nán ti:x tatlo:ma:'nán.*
 mat tzi:'sa i'x-ta-skuj-ma:'-nan
 QTV night PST-3PL.SUB-work-PROG-ST.PL
 ti: i'x-ta-tlo:-ma:'-nan
 HREL PST-3PL.SUB-do-PROG-ST.PL
 'It's said those who were doing (the construction) were working at night.' [SLO: Cuentos 141]

(639) *E:' a'ntzá xi'kta:'lawí: qa'tla:tús kintzi:'t xwaní:'t.*
 e:' a'ntzá i'x-i'k-ta:'-lawí:-Ø qa'tla:tús kin-tzi:'t
 and over.there PST-1SG.SUB-CMT-live-IMPF little.while 1POSS-mother
 i'x-wan-ni:'t
 PST-be-PF
 'and I lived over there for a little while together with my mother when she had been alive.' [SLO: Cuentos: 26]

The example in (637) shows that the past combines with the imperfective aspect in past habitual expressions and in (638), with the progressive aspect to denote an event that was

regularly occurring at the same time as another regularly occurring or habitual event in past time. The example in (639) demonstrates that the perfect *i'xwani:t* 'she had existed/lived' expresses a regular occurrence in the past at the same time as another state in the past denoted by a verbal predicate in the imperfective *xi'kta:lawi:* 'I lived together with someone'. The use of the atelic verbs *lawi:* 'live' and *wan* 'be' in (639) may further contribute to the perspective that the state or event is continuous or unbounded at the same time as another unbounded event in the past.

The past tense does not morphologically combine with the perfective in expressions in the indicative mood. Nevertheless, in narratives, the past tense is used to situate an event at a point in time in the past and works together with the perfective (and other aspects) as a means of unfolding or connecting a sequence of events in the discourse or narrative. In the excerpt from the Frog Story in (640), for instance, the speaker sets the narrative in past time in the first line and then uses the perfective without subsequent tense marking to relate the sequence of events as they occurred. In this excerpt, the speaker was prompted from a picture book by Mayer (1969) about a little boy and his dog, who goes on a search for his frog and so each phrase or clause may correlate with an image in the book.

(640) *Cha:'tín sqá'ta' i'xqalhi: cha:'tín wanqén e:' cha:'tín i'xchichí'. Tzi:'swánli'. Tamá:lh sqá'ta' nai'xtáma'. Tatukálh i'xchichí'. Chi: xqa'qá:lh, takí:'li sqá'ta'...*

- (a) cha:'-tín sqá'ta' i'x-qalhi: cha:'-tín wanqén
 NUM.CLF-one child PST-have NUM.CLF-one frog
- e:' cha:'-tín i'x-chichí'
 and NUM.CLF-one 3POSS-dog
- (b) tzi:'swán-**li'**
 night.fall-PFV
- (c) tamá:-**lh** sqá'ta' nak=i'x-táma'
 lie.down-PFV child LOC-3POSS-bed
- (d) ta-tuká-**lh** i'xchichí'
 DCS-go.up-PFV 3POSS-dog
- (e) chi: xqa'qá:-**lh** takí:'-**lh**≡i sqá'ta'
 PTCL dawn-PFV get.up-PFV≡JUNCT child

‘(a) A boy had a frog and a dog. (b) Night has fallen. (c) The boy lay down on his bed. (d) The dog went up. (e) When it dawned, the boy got up...’ [FAS: Frog story 2-4]

The past tense in (640) is used to locate the story in the past. The speaker then uses the perfective aspect to narrate a progression of events that follow as they unfold one after the other as a completed, bounded whole.

5.2.2.3 Future

The future tense in ZT is marked with the prefix *na-* and only combines with the imperfective aspect. The future tense is used to express situations, states, or events that are predicted to occur at some point after the present moment denoted by the time of speech. When the future tense prefix *na-* combines with the first-person prefix *i'k-*, the combination is commonly realized as *nak-*, where the initial *i'*- of the first-person subject prefix is elided, as in the future prediction in (641).

(641) *E:' naktamo:'qó'sa. Naka'nta:kí:' nakxká:n.*

e:' **na**-i'k-ta-mo:'qó's-a **na**-i'k-a'nta:kí:'-Ø nak=xka:n
 and **FUT**-1SG.SUB-INCH-fall-**IMPF** **FUT**-1SG.SUB-go.suddenly-**IMPF** **LOC**=water
 'And I'm going to fall. I'm going to end up in the water.' [FAS: Woodchopper 11]

In the context from the short narrative, “The Woodchopper”, in (641), the wife is predicting that the woodchopper, at some point in time subsequent to the time of speech, will drop a log in the path on his way to chop wood. The wife predicts that she would later trip over the log and fall into the river.

Subordinate clauses expressing a planned future event may also take the future tense, as seen in (642).

(642) *Laqalí: i'kpu:wán tziśáj na'ktaxtú.*

laqalí: Ø-i'k-pu:wán-Ø tziśáj **na**-i'k-taxtú-Ø
 tomorrow **PRES**-1SG.SUB-think-**IMPF** early.morning **FUT**-1SG.SUB-leave-**IMPF**
 'Tomorrow I think I will leave early.'

A subordinate clause that states the purpose for the event of the main clause also appears in the future tense, as shown in (643).

(643) *Kastilhti' kapén kínu xatzé naská:ka.*

ka-stilh-ti' kapén kínu xa-tze **na**-ska:k-a
OPT-distribute-2SG.SUB:PFV coffee so.that **DTV**-good **FUT**-dry.out-**IMPF**
 'Spread out the coffee, so it will dry out well.'

Additionally, the future tense is found in both the main clause and subordinate clause in reference to a hypothetical event, as exemplified in (644).

(644) *Sa: napi'na', nate:maqá:na' qantín kí'wi' naktéj.*

sa: **na**-pi'n-a' **na**-te:-maqá:n-a' qan-tin
 if **FUT**-go:2SUB-**IMPF**:2SG.SUB **FUT**-PATH-throw-**IMPF**:2SG.SUB **NUM**.CLF-one

kí'wi' nak=tej
 stick **LOC**=path

'If you go, you will drop a stick in the path.' [FAS: Woodchopper 9]

The tense of a clause can also be a relative tense, as in (645), where the future tense is used relative to a past reference point.

(645) *I'xwán katawilaqe:'títi' nawa'yaná:uj.*
 i'x-wan-Ø ka-ta-wilá-qe:'-tít≡i **na-wa'yán-a:-uj**
 PST-say-IMPF OPT-INCH-sit-TOT-2PL.SUB≡JUNCT FUT-eat-IMPF-1PL.SUB
 'She said you all sit down and we will eat.' [RVA: Cuentos 19]

The example in (645) demonstrates the future tense is used in the complement clause of a reporting verb in the past tense, where the speaker is reminiscing about childhood events with her sister. The occurrence expressed in the future tense is relative to a reference point in past time. The examples further show that the future tense expresses unrealized, unactualized, and even hypothetical situations and only combines with the imperfective since these events are unrealized and incomplete affairs.

To summarize this section on tense, all verbs in ZT inflect for one of three tenses: the present, which is the unmarked form, the past, and the future. Tense and aspect combine in somewhat restricted ways that are formally and semantically motivated. The various tenses and aspects, nevertheless, combine with each other in larger discourse and narrative structures in complex ways. For instance, even though the past tense does not combine morphologically with the perfective aspect in the indicative mood, these two systems work closely together. In fact, the combination of the past tense *i'x-* with perfective marking is used in the expression of the irrealis mood (cf. §5.2.3.4), which is discussed in the next section.

5.2.3 Mood

Mood is the grammatical category that encodes a speaker's beliefs or attitude about a state of affairs and is generally thought of as distinguishing realis (actual or realized) from irrealis (non-actual or non-realized) situations (Palmer 2001). Verbs in Zihuateutla are inflected for the realis (indicative mood) or for several irrealis moods (optative, potential, and the mood formally described as the "irrealis"). Since the classification of mood varies across the Totonacan languages, this analysis is based on the description of mood found in Beck (2011) for Upper Necaxa. Mood in ZT seems to follow this system most closely and this pattern may be characteristic of the languages in the Central Totonac group (Beck 2014). Furthermore, the term referring to the formal expression of the "irrealis" mood in ZT follows the Totonacan linguistic literature, where it refers to a combination of affixes

that have cognates across the languages that mark what is called the “irrealis mood” in these studies (Tlachichilco Tepehua: Watters 1988, Apapantilla Totonac: Reid 1991, Upper Necaxa Totonac: Beck 2004 & 2011, Huehuetla Tepehua: Kung 2007a, Filomeno Mata Totonac: McFarland 2009).

The description of mood in ZT requires further work and documentation, but in general, it can be described as a grammatical system that categorizes states of affairs that are realized or thought to be real from those that are not. The indicative mood indicates that a specific event or state of affairs is considered to be factual by the speaker and is the default mood, marked by the absence of any other mood marker. An example of a clause in the indicative mood is seen in (646), where the indicative is being represented with a zero affix for descriptive purposes in the position where other mood affixes would appear.

(646) *Wa'chí' kit i'kpastáka.*

wa'chí' kit Ø–Ø–i'k–pasták–a
 like.this PRN.1SG PRES–IND–1SG.SUB–remember–IMPF
 ‘...that’s how I remember it.’ [RVA: Cuentos 95]

As has been shown in §5.2.1 through §5.2.2, the indicative mood makes distinctions for all tenses and aspects.

The optative mood is marked with the prefix *ka-* and is used to express the speakers’ desired state of affairs, as in (647).

(647) *Kataxtuya:'tít.*

ka–taxtú–ya:’–tít
OPT–leave–IMPF:2SUB–2PL.SUB
 ‘May you all leave!’

Verbs inflected with the optative express a range of mental states or attitudes about the proposition by the speaker, such as desideratives, imperatives, exhortations, or negative commands. The optative mood is only found in the database inflected for the imperfective and perfective aspects and there are no examples in the ZT database where the optative appears with tense inflection.

The potential mood, marked with the prefix *ti’-*, is used to express things that are not true at the time of reference but are potentially realizable, as in (648).

(648) *Ti'taxtuya:'tít.*

ti'-taxtú-ya:'-tít

POT-leave-IMPF:2SUB-2PL.SUB

'You all might leave.'

Verbs inflected for the potential mood denote the speaker's beliefs that a situation is possible or probable, as in (648). This mood is also found inflected for the imperfective and perfective aspects and does not appear in any examples in the ZT database with tense inflection. The potential mood is found with tense inflection in other Totonac languages, and potential and optative moods form a full paradigm inflected for all aspects in Upper Necaxa Totonac (Beck 2011), so this is likely not a semantic restriction on combining these two moods with the other tenses or aspects but rather a gap in the collected corpus.

The mood formally referred to as the "irrealis" is conveyed by an idiosyncratic combination of affixes borrowed from other tense and mood paradigms, as is common in other languages (Palmer 2001). Irrealis mood is the name used for the affix(es) that are cognate in other Totonacan languages, which in particular makes use of the perfective aspectual suffixes. The irrealis mood is used to express unreal or hypothetical situations similar to the subjunctive in other languages, as exemplified in (649).

(649) *I'xtataxtúlh...*

i'x-ta-taxtú-**lh**

PST-3PL.SUB-leave-PFV

'Were they to leave!'

'If they leave,...'

The present tense of the irrealis mood in (649) is marked with the past tense prefix *i'x-* in combination with the perfective suffix *-lh*. Irrealis mood expresses a speaker's attitude that an event or state of affairs is hypothetical, unreal, impossible, or not potentially realizable. It can be found as part of the condition or result clause (or both) in expressions of hypothetical conditions. The irrealis also seems to make distinctions for the past, present, and future tenses but does not appear to indicate the variety of aspectual inflections.

Table 39 highlights the mood markers in bold on the verb *taxtú* 'leave' for the indicative (Ø), optative (*ka-*), potential (*ti'-*), and irrealis (*i'x-* *-li'*). The mood paradigms are presented

in Table 39 in the present tense, at least for the indicative and irrealis moods; the affixes inducing the mood have been highlighted in bold.

Table 39: Mood paradigms (*taxtú* ‘leave’)

	Indicative	Optative	Potential	Irrealis
1SG	<i>i'ktaxtú</i>	ka' <i>iktaxtú</i>	<i>i'kti'</i> taxtú	<i>xai'</i> ktaxtúlh
2SG	<i>taxtúya'</i>	ka <i>taxtúya'</i>	ti' <i>taxtúya'</i>	<i>i'xtáxtu'</i>
3SG	<i>taxtú</i>	ka <i>taxtú</i>	ti' <i>taxtú</i>	<i>i'xtaxtúlh</i>
1PL.EXC	<i>i'ktaxtuyá:uj</i>	ka' <i>iktaxtuyá:uj</i>	<i>i'kti'</i> taxtuyá:uj	<i>xai'</i> ktaxtúj
1PL.INCL	<i>taxtuyá:uj</i>	ka <i>taxtuyá:uj</i>	ti' <i>taxtuyá:uj</i>	<i>i'xtaxtúj</i>
2PL	<i>taxtuya:'tít</i>	ka <i>taxtuya:'tít</i>	ti' <i>taxtuya:'tít</i>	<i>i'xtaxtutít</i>
3PL	<i>tataxtú</i>	ka <i>tataxtú</i>	ti' <i>tataxtú</i>	<i>i'xtataxtúlh</i>

Table 39 shows that the optative prefix *ka-* precedes the person prefixes. The potential *ti'-* appears in two different positions: after the first-person subject prefix *i'k-*, or before the third-person plural subject prefix *ta-*; this order of affixes is reflected in the template illustrated in Figure 7. The irrealis mood in the present tense is marked by a combination of the past tense prefix *i'x-* and the perfective form of the verb, here marked with the suffix *-lh* on those verbs that do not take person agreement suffixes. The mood formally described as the “irrealis” also makes use of other mood markers in past and future forms (see §5.2.3.4).

The following subsections describe the forms and functions of the mood system in ZT. The indicative mood expressing situations that are believed by the speaker to be true is presented in §5.2.3.1. The optative mood conveys a speaker’s desires or wishes and is found in a variety of situations demonstrated in §5.2.3.2. The potential mood denotes states or events that are not actualized but the speaker believes to be probable or potentially realizable, as shown in §5.2.3.3. The “irrealis” mood expresses a variety of unreal, unactualized, impossible, or hypothetical situations and uses an idiosyncratic combination of tense, aspect, and mood affixes described in §5.2.3.4.

5.2.3.1 Indicative

The indicative mood is used to express states or events that happen or are perceived to be factual. The indicative mood is marked by the absence of overt morphology, which is represented in this section with a zero morpheme for heuristic purposes, as shown in (650)-(652).

(650) *Pero ka:'makán i'xcha'pa:nán nakxwá:'ti'. I'xcha'pa:nán chu: lha: na tu molíno.*

pero ka:'makán i'x-Ø-cha'pa:-nan-Ø nak=xwá:'ti'
but by.hand PST-IND-mill-AP-IMPF LOC=metate

i'x-Ø-cha'pá:-nan-Ø chu: lha: na tu: molíno
PST-IND-mill-AP-IMPF PTCL NEG still PTCL miller

'But they milled by hand in the metate. They milled since there was still no miller.' [RVA: Cuentos 36]

(651) *Lha: kila:ta:'latulakutuná:uj.*

lha: Ø-Ø-kin-la:-ta:'-la-tulá-kutun-a:-uj
NEG PRES-IND-1OBJ-RCP-CMT-be-sit-DSD-IMPF-1PL.SUB

'You all do not want to live with me.' [RVA: Cuentos: 24]

(652) *Nachi'pa:kán lha:tzá' talakatzunajé:.*

na-Ø-chi'pá:-kan-Ø lha:=tzá' Ø-Ø-ta-lakatzunajé:-Ø
FUT-IND-trap-IDF-IMPF when=now PRES-IND-3PL.SUB-close.by-IMPF

'They are going to trap him, now when they get close to him.' [MCC: Witch story 6]

The examples in (650)-(652) demonstrate that the indicative mood is compatible with all three tenses (past, present, and future) and thereby locates the event on a timeline for which the speaker believes the proposition to be true. The indicative mood also takes inflections for all aspects, which was illustrated in the sub-sections on aspect in §5.2.1.

5.2.3.2 Optative

The optative mood, marked with the prefix *ka-*, is used to express a speaker's mental state or attitude about the proposition. The optative is found in the imperfective aspect in (653), and the perfective in (654)-(655).

(653) *Ka'iktaxtuyá:uj!*

ka-i'k-taxtú-**ya**:-uj
OPT-1SG.SUB-leave-IMP-1PL.SUB
'Let's leave!'

(654) *Kakimaxkí:lh dios kintalhi'wi'kít! Kakimaxkí:lh kinqá'lhni'!*

ka-kin-maxkí:-**lh** dios kin-talhi'wi'kít **ka**-kin-maxkí:-**lh** kin-qá'lhni'
OPT-1OBJ-give-PFV god 1POSS-strength OPT-1OBJ-give-PFV 1POSS-blood
'God give me strength! Give me my blood!' [RVA: Cuentos 97-98]

(655) *Choj maqtín chu: wa'chi' kata'ampá i'xamígos.*

choj maq-tin chu: wa'chi' **ka**-ta-a'n-pa i'x-amígos
now NUM.CLF-one PTCL like.this OPT-3PL.SUB-go-RPT 3POSS-friends
'Now, one time, like that, his friends wanted to go again.' [RLP: Chameleon 40]

The example in (653) illustrates an optative construction inflected for the imperfective expressing the speaker's desire, potentially in the form of a command or exhortation. In (654), the optative form in the perfective aspect expresses a desired state of affairs about the speaker's wishes, hopes and desires. In (655), the optative mood appears in an affirmative construction expressing an activity desired by the participants in the event.

The optative is used in expressions of imperatives, commands or exhortations, as in (656)-(659). The verbal predicate in the optative appears inflected for the perfective aspect and a second-person subject in (656)-(658), and a first-person plural subject in (659).

(656) *Kalá'qtzi'! I'ksta'jqó:lh e:' i'klonhqaxni:te:lhá.*

ka-lá'qtzi' Ø-i'k-sta'j-qo:-lh e:'
OPT-see:2SG.SUB:PFV IND-1SG.SUB-wet-TOT-PFV and

Ø-Ø-i'k-lonq-a-xni:-te:lhá
PRES-IND-1SG.SUB-be.cold-IMP-IMP-AMB

'Look! I got completely wet and I'm going along all cold.' [FAS: Woodchopper 26]

(657) *Kapinchi' páxa!*

ka-pin-**chi'**-Ø Ø-Ø-pax-a
OPT-go:2SUB-DIST:2SG.SUB-PFV PRES-IND-bathe-IMP
'Go take a bath!'

(658) *Kakima:sputu:núni'. Lha: lí:wa i'klhúlh.*

ka-kin-ma:-sput-u:-nun-ni'-Ø lha: lí:wa i'k-lhu-lh
OPT-1OBJ-CS-finish-CS-AP-DAT:2SG.SUB-PFV NEG on.purpose 1SG.SUB-do-PFV
'Forgive me, I didn't do it on purpose.' [FAS: Woodchopper 28]

(659) *E: 'lha: cha: ma: 'kalaqtziuj, wani chi'xku'.*

e: ' lha: cha: ma: ' **ka-laqtzín-uj-Ø** Ø-Ø-wan-ni-Ø
 and where PTCL lie **OPT-see-1PL.SUB-PFV** PRES-IND-say-DAT-IMPF

chi'xku'

man

'The man says to her, 'And where is it? Let's see it!'' [FAS: Shopping List 7]

The verb forms in the optative mood in (656), (657), and (659) are Class 3 *n*-final verb stems and the one in (658) is a Class 1 vowel-final stem, all of which are represented as taking a zero-affix for the perfective as discussed in §5.2.1.2. Furthermore, in (657), the perfective aspect is not marked in verbs that take the distal suffix *-chi'*, which expresses direction away from the speaker (cf. §6.2.7).

The optative is used in the formation of negative exhortations, commands, or admonitions with the negative particle *lha:* in pre-verbal positions, as seen in (660)-(663).

(660) *Wani i'xpuská:t Maria lha: kapiti tzi:'sa!*

Ø-Ø-wan-ni-Ø i'x-puská:t Maria
 PRES-IND-say-DAT-IMPF 3POSS-woman Maria

lha: **ka-pit**≡i tzi:'sa

NEG OPT-go:2SG.SUB:PFV≡JUNCT night

'His wife, Maria, says to him, don't go out at night!' [FAS: Woodchopper 8]

(661) *Lha: kakilhtáya' tzamá: kí'wi'. Qowá'jwa'!*

lha: **ka-kilh-táya'** tzamá: kí'wi' qowá'jwa'
NEG OPT-mouth-take:2SG.SUB:PFV that stick ugly

'Don't put that stick in your mouth! It's ugly!'

(662) *Lha:tzá' kaka:tláqa' káxli'!*

lha:≡tzá' **ka-ka:-tláqa'** káxli'
NEG=now OPT-PL.OBJ-scare:2SG.SUB:PFV chicken

'Don't scare the chickens away!'

(663) *Lha: kawá't tzamá: pi'n. Lhká:ka'!*

lha: **ka-wa'-t** tzamá: pi'n lhká:ka'
NEG OPT-eat-2SG.SUB:PFV that chili hot

'Don't eat that chili! It's hot!'

In (660)-(663), the meaning of the optative mood takes scope over the negation which in turn takes scope over the verb stem. In other words, the clause in the optative mood expresses the idea that the desired state or event is the one that is being negated even though

the ordering of the negative particle appears before the optative form of the verb.

The optative mood is compatible with the desiderative suffix *-kutun*, which also has modal-like functions expressing desired states or events, as in the interrogative in (664).

(664) *Lha: chu: kit nai'ká'n? Lha: chu: ka'nkutún?*

lha: chu: kit na-Ø-i'k-a'n-Ø
 where PTCL PRN.1SG FUT-IND-1SG.SUB-go-IMPF

lha: chu: **ka-a'n-kutun-Ø**
 where PTCL **OPT-go-DSD-IMPF**

'Where will I go? Where does one want to go?' [RVA: Cuentos 103]

The desiderative suffix *-kutun* similarly expresses the idea that the subject desires the realization of the event denoted by the verb and it may appear on verb stems without the optative prefix *ka-* in expressions of desire. While the optative is considered an inflectional category in this dissertation, the desiderative is described as an adverbial derivational verb suffix (cf. §6.2.8). The optative mood is most used to express desired states of affairs, like desideratives, imperatives, exhortations or negative commands. The possibility for the optative to combine with other tenses and aspects require further investigation. The optative marker *ka-* also appears in combination with the potential mood marker *ti'-* and the perfective suffix *-li'* in the formation of the future irrealis, as discussed in §5.2.3.4.

5.2.3.3 Potential

The potential mood marker *ti'-* is used in expressions of possible but unrealized situations. The potential mood co-occurs with a verb in the imperfective in (665); the imperfective suffix *-ya'* in this example is a portmanteau of the 2SG.SUB and IMPF, as was described in §5.1.1.

(665) *Ti'taxtúya'*.

ti'-taxtú-ya'
POT-leave-IMPF:2SG.SUB
 'You might leave.'

In (666), taken from a personal narrative, the potential co-occurs with a verb marked in the perfective aspect, suggesting that the posited event was possible, but did not take place.

(666) *Tonces ti'le:'nka'tzá'. Mat ti'le:'nka'tzá'.*

tonces **ti'**-le:'n-ka'=tzá' mat **ti'**-le:'n-ka'=tza'
 then **POT**-take-IDF:PFV=now QTV **POT**-take-IDF:PFV=now
 'Then it's said that they could have taken (the statue); they could have taken it.'
 [SLO: Cuentos 73]

The example in (666) refers to a past event when law enforcement officials arrived in Zihuateutla and planned to take the statue of San Manuel to La Union, which had then become the new government center. The speaker uses the potential mood to express the idea that in the minds of the officials, it was possible for them to take the statue (which they did attempt to do), but the event never occurred because they had not realized how heavy the statue was. Several lines later in the same narrative, the speaker uses a negative potential to describe that, in the end, the event was not probable because the statue weighed too much to move, as seen in (667).

(667) *Tzi'nkánli' mat. Tzi'nkánli'. Lha:tzá' mat ti'lé:'lh. Lha:tzá' mat tilé:'lh.*

Ø-tzi'nkán-li' mat Ø-tzi'nkán-li'
 IND-be.heavy-PFV QTV IND-be.heavy-PFV

lha:=tzá' mat **ti'**-le:'n-lh **lha:**=tzá' mat **ti'**-le:'n-lh
NEG=now QTV **POT**-take-PFV **NEG**=now QTV **POT**-take-PFV
 'It's said (the statue) was heavy. It was heavy. They could not take it in the end;
 they could not take it.' [SLO: Cuentos 81-82]

The example in (667) can illustrate that the negation takes scope over the potential mood, where the negative particle is used to negate the possibility of the event. This differs from the optative predicates in the negative where the optative takes scope over the negation discussed in §5.2.3.2; these differences in scope however may show variability and require further investigation.

The potential mood is used to express the probability of an event in the elicited examples shown in (668)-(669).

(668) *Tatu:nú:t tun ti'maxki:ni' milaqapásni' kawálh chichí'.*

tatu:nú:t tu:≡n **ti'**-maxki:-ni' min-laqapásni'
 shoe NREL≡JUNCT **POT**-give:IMPF-2SG.OBJ 2POSS-family.member

ka:-wá-lh chichí'
 PL.OBJ-eat-PFV dog

'The dog wanted to eat the shoes your cousin would give you.'

(669) *Kí'klhwa' kawán chi'xkú', lha: kinti'maxki:lh tumí:n.*

kí'klhwa' ka-wan chi'xkú' lha: kin-**ti'**-maxki:-lh tumí:n
 bad OPT-be man NEG 1OBJ-**POT**-give-PFV money

'If the man were bad, he would not give me money.'

The verb in the potential mood in (668) is in a relative clause referring to the possibility of the shoes being gifted, whereas in (669) the verb in the potential mood is part of a conditional expression and conveys the probability of the outcome of the event denoted by the condition.

The potential mood is used idiomatically with a verb of saying in (670) to express the speaker's frustration or disappointment that a more desirable situation was unrealized, namely the speaker expresses the fact that she did not want the ADDRESSEE to leave in order to chop wood.

(670) *Lí:wa' pi't laqxqa:nána'. I'kti'wani'ni' lha: kapi't!*

lí:wa' Ø-pi't Ø-Ø-laq-xqa:-nan-a'
 on.purpose IND-leave:2SG.SUB:PFV PRES-IND-INTNS-chop-AP-IMPF:2SG.SUB

i'k-**ti'**-wan-ni'-ni'-Ø lha: ka-pi't
 1SG.SUB-**POT**-say-DAT-2OBJ-PFV NEG OPT-go:2SG.SUB:PFV

'Why did you leave to chop wood? I told you not to leave!' [FAS: Woodchopper 23]

The clause in the potential mood in (670) with the verb *wani'* 'say something to someone' is used idiomatically in an expression of the speaker's frustration with the ADDRESSEE for not having participated in the desired action or outcome of the speaker in that her wishes or commands were ignored. The unrealized situation is expressed by the complement clause inflected for the optative mood. This use of the potential is rather particular and may correspond to the frustrative use of the potential in UNT (Beck 2017b). While most examples in the potential mood are found in the perfective aspect, the combination of the potential with other tense and aspect markers and their various functions require further

investigation.

5.2.3.4 *Irrealis*

The irrealis mood in ZT is used to express hypothetical or unreal situations and states or events that are not potentially realizable in the speaker's mind. The irrealis is formed with an idiosyncratic combination of affixes taken from other parts of the inflectional paradigm and is always marked as if it were in the perfective aspect. All three tenses — i.e., the future, the present, and the past — can be found combined with the irrealis in ZT. The idiosyncratic set of affixes that express each of these irrealis forms is found in Table 40.

Table 40: Irrealis mood paradigms in ZT for the past, present, and future

Irrealis	
Future	<i>ka- ti'- -li'</i>
Present	<i>i'x- -li'</i>
Past	<i>i'x- ti'- -li'</i>

Table 40 shows that the irrealis mood combines with all tenses in ZT and makes use of the perfective suffix in each. There is a limited number of irrealis examples in the ZT database and it is difficult to elicit some of these forms, so the irrealis has not been examined in depth to date. However, the form and functions of the irrealis that are found in ZT seem to coincide with the system described for UNT in Beck (2004, 2011, 2014).

The future irrealis is formed with the combination of the optative and potential prefix and the perfective suffix as in (671)-(673) and expresses a hypothetical or impossible future state of affairs.

(671) *Ka'kti'latamá:'lh a:'laqatá:'ti' laqakitizís ká:ta'!*

ka-i'k-ti'-latama:'-lh a:'-laqa-tá:'ti' laqa-kitizís ká:ta'
OPT-1SG.SUB-POT-live-PFV ADD-NUM.CLF-four NUM.CLF-five year
 'Were I to live four or five more years!' [RVA: Cuentos 96]

(672) *Lha: kati'pa:tle'qé:'lh wani Juan, a:'lh.*

lha: **ka-ti'**-pa:tle'qé:-**lh** Ø-Ø-wan-ni-Ø Juan Ø-a'n-lh
 NEG **OPT-POT**-happen-PFV PRES-IND-say-DAT-IMPF Juan IND-go-PFV
 'It is not going to happen, says Juan, and he left.' [FAS: Woodchopper 14]

(673) *Ki:nú ma:x xatzé lha: max kati'lé:'ujun mat wankán.*

ki:nú ma:x xa-tze lha: ma:x **ka-ti'**-le:'n-uj-Ø≡un
 so maybe DTV-good NEG maybe **OPT-POT**-take-1PL.SUB-PFV≡JUNCT

mat Ø-Ø-wan-kan-Ø

QTV PRES-IND-say-IDF-IMPF

'They say it is probably better that we will not take (the statue).'

[SLO: Cuentos 85]

The future irrealis in (671) expresses the speaker's belief that she will not live much longer. A negative future irrealis is used in (672) to express Juan the Woodchopper's belief that it will be impossible for him to drop a stick on the path over which his wife could trip over and fall. Similarly, the example in (673) uses the negative future irrealis to describe the impossibility that the officials will move the statue because it is too heavy.

The present form of the irrealis mood is composed of the combination of the past tense prefix and the perfective suffix, as shown in (674)-(675).

(674) *Tu: xai'ká'lh i'kti:yá kí'wi', lha: tu:n tu: i'xli:tzi'tzi'nti' wani'káni Maria.*

tu: **xa-i'k-a'n-lh** Ø-Ø-i'k-ti:yá-Ø kí'wi'
 PTCL **PST**-1SG.SUB-go-PFV PRES-IND-1SG.SUB-take-IMPF wood

lha: tu:≡n tu: **i'x-li:-tzi'tzi'n-ti'**
 NEG PTCL≡JUNCT NREL **PST**-INST-be.warm-2SG.SUB:PFV

Ø-Ø-wan-ni'-kan-Ø≡i Maria

PRES-IND-say-DAT-IDF-IMPF≡JUNCT Maria

'If I had not gone to bring wood, you would have nothing to warm you up, he tells Maria.' [FAS: Woodchopper 29-30]

(675) *Che:'má mat i'xma:lakí:ka', i'xtze:yá:lh.*

chi: a:'má **i'x-ma:-lakí:-ka'** **i'x-tze:yá:-lh**
 PTCL like.this **PST-CS**-open-IDF:PFV **PST**-get.better-PFV

'If they_{IDF} had made the door open like this, (the church) would have been better.'

[SLO: Cuentos de un abuelito: 138]

The example in (674) describes the hypothetical condition that had the Woodchopper not gone to cut wood that it would be impossible for his wife, Maria, to be warm by the fire.

In (675), the irrealis form of the verb expresses a hypothetical, but unreal, condition that had the door of the church faced a different direction, the design would be much better now because the door would be facing toward the sunrise. The examples in (674)-(675) further show that in the absence of an element meaning *sa*: ‘if’, the conditional meaning of the subordinate clause (introduced with the particles *tu*: and *chi*:) is contributed by the marking of the irrealis mood, as has been observed in other languages (Bybee et al. 1994: 209).

Finally, there is only one contextualized example — i.e. from a narrative — of the past irrealis, which is marked with the past tense and potential prefix and the perfective suffix, as seen in (676). The example expresses an unreal or hypothetical situation in past time.

(676) *I'xti'lhukutumá:'ka' nakCacahuatlán choj li:tzukúka' a:'tzá' tza' ya:*.

i'x-ti'-lhu-kutun-ma:'-ka' nak=Cacahuatlán choj
PST-POT-do-DSD-PROG-IDF:PFV LOC=Cacahuatlán now

Ø-li:-tzukú-ka' a:'tzá' tza' Ø-Ø-ya:-Ø
IND-INST-begin-IDF:PFV here over.there PRES-IND-stand-IMPF

‘They_{IDF} would have wanted to make (the church) in Cacahuatlán, but they_{IDF} began here with the one over there.’ [SLO: Cuentos 133]

The excerpt in (676) tells of a situation concerning a church that was never built in Cacahuatlán because it was erected in the town of Zihuateutla instead; the past irrealis expresses the event was an unreal, or hypothetical situation in the past.

To summarize this subsection on mood, ZT makes a grammatical distinction between those statements that express realis from irrealis. The indicative mood, as is common cross-linguistically, is marked by the absence of any overt mood marker and expresses the speaker’s assertion of the truth of the proposition. The other three moods can be generally described as expressing irrealis — that is, unrealized or non-actual situations. The optative conveys a speaker’s desires, such as desideratives, imperatives, exhortatives, or negative commands. The potential mood refers to a speaker’s belief that a state or event is possible or probable but unactualized. The mood formally described as the irrealis uses an idiosyncratic combination of affixes from the tense, aspect, and mood paradigms to convey situations that are believed to be impossible or hypothetical.

The next section describes the inflectional patterns of stative verbs, which are a subclass of verbs that are imperfective in form and meaning. Stative verbs are distinguished from

dynamic verbs based on morphological criteria in that they do not take the variety of aspectual inflections attested for the dynamic verb class unless derived into dynamic forms. Stative stems inflect for tense and mood as described in §5.2.2 and §5.2.3 above, although they show some minor differences in patterns of agreement.

5.3 Stative Verbs

This section illustrates the class of verbs formally described as stative verbs in ZT. Stative verbs constitute a small class of verbs that are imperfective in form and function, and that express states, physical configurations, or postures that are construed as unchanging over time with no definite beginning or end. This subclass of verbs is formally distinguished from dynamic roots and stems on morphological grounds. The subclass of verbs formally called stative verbs do not show inflectional aspectual distinctions unless derived into dynamic stems. Two types of verbs fall into this category, ordinary stative verbs and stative posture verbs. These two subtypes of stative verbs are distinguished based on functional criteria. Ordinary stative verb stems are generally formed from bound roots or monomorphemic stems that have locative and positional senses (see §5.3.1). Stative posture verbs, on the other hand, are a small closed class of four posture verbs that participate in specific locative and existential expressions as well as some idiomatic constructions (see §5.3.2). This section describes the form and function of stative verbs and includes the patterns of agreement morphology in intransitive and transitive stative verb stems and their aspectual inflections in derived dynamic forms. The class of stative verbs are easily found in compound verbs and productively combine with body-part terms in locative expressions, which are also described in §3.3.3.1.

5.3.1 Ordinary Stative Verbs

Ordinary stative verbs express states, physical configurations, and positions that persist over time. This class of stative verbs contains some monomorphemic stems and stems formed from the combination of a small class of bound roots that have locative,

configurational, or directional senses, including *-kut* ‘up, outward’, *-nu:* ‘in, on’, *-qe:* ‘uncovered’, and *-xtu* ‘out’. These stative stems do not inflect for aspect, but become the base for derivation of their dynamic counterparts, which are generally synonymous, with the addition of the inchoative prefix *ta-* or the causative prefix *ma:-*. Inchoative and causative derived forms of stative bases can then take the usual range of aspectual inflections. Stative bases and their derived inchoative and causative forms (the prefixes for which are highlighted in bold) are illustrated in Table 41. The dash (-) in the table represents forms that are unattested in the ZT database.

Table 41: Stative base, inchoative, and causative forms for six ZT stative verbs

Stative base	English gloss	Inchoative	English gloss	Causative	English gloss
<i>-kut</i>	‘be up, outward’	<i>takút-</i>	‘get up, get out’	–	
<i>-nu:</i>	‘be in, on’	<i>tanú:</i>	‘go in, on’	<i>ma:nú:</i>	‘put inside’
<i>-qe:</i>	‘be uncovered’	–		<i>ma:qé:</i>	‘uncover sth’
<i>-xtu</i>	‘be out’	<i>taxtú</i>	‘go out’	<i>ma:xtú</i>	‘take sth out’
<i>lakí:</i>	‘be open’	<i>talakí:</i>	‘come open’	<i>ma:lakí:</i>	‘open sth’
<i>tzumá:</i>	‘be full’	<i>tatzumá:</i>	‘come to fill’	<i>ma:tzumá:</i>	‘fill sth’

The bound and unbound stative forms in the first column in Table 41 constitute the base of stems that may take incorporated body-part terms (see §6.1.5) and certain affixes that form stems that remain stative in inflectional terms. Ordinary statives have the same tense, person and number inflections as regular dynamic verbs, as shown in (677)-(678), and productively combine with body-part terms to form new stative stems, as in (679).

(677) *I'xlakí:*

i'x-Ø-**lakí:**

PST-3SG.SUB-**be.open**

‘It was open.’

dynamic transitive verbs described as a decausative. Causative forms of stative stems are also discussed in §6.1.1.1, which describes how the application of the causative with regular dynamic verbs take the circumfix *ma:- -ni:*.

5.3.2 Stative Posture Verbs

Stative posture verbs belong to a closed class of four verbs: *wi:* ‘sit’, *ma:’* ‘lie’, *ya:* ‘stand’, and *wa’ká’* ‘be high up, hang’. These four posture verbs are characterized by Grinevald (2006) as basic posture verbs, namely sitting, standing, and lying, plus an additional posture verb, hanging, that is common to Amerindian languages. The posture verbs indicate the posture, configuration, or position of a person or thing that is maintained through time. These verbs also inflect for person and number but take the stative plural marker *-nan* in forms with a plural subject, as illustrated in the paradigms in Table 42, where the posture verbs have been highlighted in bold.

Table 42: Person paradigms for stative posture verbs

	<i>wi:</i> ‘sit’	<i>ma:’</i> ‘lie’	<i>ya:</i> ‘stand’	<i>wa’ká’</i> ‘be high up’
1SG	<i>i’kwí:</i>	<i>i’kmá:’</i>	<i>i’kyá:</i>	<i>i’kwa’ká’</i>
2SG	<i>wíla’</i>	<i>pa:’t</i>	<i>ya:’t</i>	<i>wá’ka’</i>
3SG	<i>wi:</i>	<i>ma:’</i>	<i>ya:</i>	<i>wa’ká’</i>
1PL_{EXC}	<i>i’kwíla:náuj</i>	<i>i’kma:’náuj</i>	<i>i’kya:náuj</i>	<i>i’kwa’ka’náuj</i>
1PL_{INC}	<i>wíla:náuj</i>	<i>ma:’náuj</i>	<i>ya:náuj</i>	<i>wa’ka’náuj</i>
2PL	<i>wíla:’na’ntít</i>	<i>pa:’na’ntít</i>	<i>ya:’na’ntít</i>	<i>wa’ka’na’ntít</i>
3PL	<i>tawíla:nán</i>	<i>tama:’nán</i>	<i>taya:nán</i>	<i>tawa’ka’nán</i>

The paradigms for the stative posture verbs in Table 42 resemble imperfective forms of dynamic verbs, however, the stative verbs do not inflect for the full range of aspects. The verb *wi:* ‘sit,’ for example, appears as *wíla(:)* with what appears as the imperfective suffix *-a(:)* in all forms except those with 1SG and 3SG subjects (similar to Class 1 imperfective dynamic verbs (cf. §5.2.1.1)). The posture verb *ma:’* ‘lie’ exhibits stem suppletion in second-person singular and plural subject forms, where it is replaced with *pa:’* and takes

the suffix *-t* (2SG.SUB) or *-tit* (2PL.SUB); these same suppletive stems appear for second-person subjects in the progressive aspect (cf. §5.2.1.3). The verbs *wíla'* ‘you sit’ and *wá'ka'* ‘you are high up/hanging’ resemble second-person subject forms in the imperfective dynamic paradigms. These two verbs are inflected for a second-person singular subject with antepenult stress and a short final laryngeal vowel, as is typical for second-person singular subjects. The posture verb *ya:* ‘stand’ is realized as *ya:'t* with the final *-t* (2SG.SUB) and laryngealization of the vowel found typical of second-person subject inflection.

As opposed to the person agreement patterns of dynamic verbs, all posture verbs with plural subjects take the stative plural marker *-nan*, as seen in (682)-(684).

(682) *Tawila:nán.*
 ta-wíla:-**nan**
 3PL.SUB-sit-ST.PL
 ‘They sit.’

(683) *Wíla:náuj.*
 wíla:-**na-uj**
 sit-ST.PL-1PL.SUB
 ‘We sit.’

(684) *Wíla:'na'ntít.*
 wíla: '-**na'n-tít**
 sit-ST.PL-2PL.SUB
 ‘You all sit.’

In forms with first-person plural subjects, the stative plural marker surfaces as *-na*, the final *-n* being truncated by the presence of the subject marker *-uj* (1PL.SUB), as shown in (683). The stative plural has an allomorph *-na'n* in those forms with second-person plural subjects, as shown in (684). The stative plural suffix *-nan* is also found in dynamic verb stems with plural subjects in the progressive aspect (cf. §5.2.1.3). The inflectional patterns of posture verbs in Table 42 are different from those found in Upper Necaxa Totonac, where stative posture verbs exhibit a combination of forms drawn from both the imperfective and perfective aspectual paradigm (Beck 2011a: 36). The ZT posture paradigms in Table 42 are more similar to the conjugational patterns found in Apapantilla Totonac (Reid 1991:106-109).

Transitive stative posture verbs

Stative posture verbs can undergo derivational processes that turn them into transitive stems with incorporated body-part morphemes. Consequently, such derived transitive posture verbs exhibit regular inflection for person and number of subject and object as is found with dynamic verbs in general but still do not inflect for aspect unless derived into dynamic forms. Table 43 illustrates the stative transitive verb paradigm for *a'klhwí*: ‘to sit on top’ derived with the bound body-part root *a'k-* ‘head’, an epenthetic *-lh-* and the stative posture verb *wi*: ‘sit’, creating a stative transitive verb form meaning ‘X is sitting on top of Y’, or literally ‘X is sitting on Y’s head’. The affixes denoting the person and number of participants in Table 43 have been highlighted in bold; the dash (–) represents illicit forms.

Table 43: Stative transitive paradigm (*a'klhwí* ‘be sitting on top of something’)

SINGULAR OBJECT			
	1SG	2SG	3SG
1SG	–	<i>i'ka'klhwiláni'</i>	<i>i'ka'klhwí:</i>
2SG	<i>ki'aklhwíla'</i>	–	<i>a'klhwíla'</i>
3SG	<i>ki'a'klhwí:</i>	<i>a'klhwiláni'</i>	<i>a'klhwí:</i>
1PL _{EXC}	–	<i>i'ka':a'klhwíla:ná'ni'</i>	<i>i'ka'klhwíla:náuj</i>
1PL _{INC}	–	–	<i>a'klhwíla:náuj</i>
2 PL	<i>kíla:a'klhwíla:ná:uj</i>	–	<i>a'klhwíla:'na'ntít</i>
3PL	<i>kíntaa'klhwíla:nán</i>	<i>taa'klhwíla:ni'</i>	<i>taa'klhwíla:nán</i>
PLURAL OBJECT			
	1PL	2PL	3PL
1SG	–	<i>i'ka':a'klhwíla:ni'</i>	<i>i'ka':a'klhwí:</i>
2SG	<i>kíla:a'klhwíla:ná:uj</i>	–	<i>ka:a'klhwíla'</i>
3SG	<i>kínka:a'klhwíla:ni'</i>	<i>ka:a'klhwíla:ni'</i>	<i>ka:a'klhwí:</i>
1PL _{EXC}	–	<i>i'ka':a'klhwíla:ni'</i>	<i>i'ka':a'klhwíla:náuj</i>
1PL _{INC}	–	–	<i>a'klhwíla:náuj</i>
2PL	<i>kíla:a'klhwíla:ná:uj</i>	–	<i>ka:a'klhwíla:'na'ntít</i>
3PL	<i>kínka:taa'klhwíla:náni'</i>	<i>ka:taa'klhwíla:ni'</i>	<i>taa'klhwíla:nán</i>

The transitive stative posture verbs display different inflectional patterns from the intransitive posture paradigm in that some plural subject forms do not take the stative plural marker *-nan*. Forms that do not appear with the stative plural in Table 43 are those where third-person plural subjects act on second-person objects (3PL > 2SG/PL), and where first-person plural subjects act on second-person plural objects (1PL > 2PL), the latter of which may be expected since this person/number combination is idiosyncratic and non-compositional (cf. §5.1.2). The absence of the plural stative marker *-nan* in these plural subject forms is similar to the absence of this marker found in the progressive transitive paradigms of dynamic verbs (cf. §5.2.1.3).

These gaps in stative plural marking in some forms with plural subjects resembles those patterns found in the progressive paradigm in Apapantilla Totonac in Reid (1991:106-109), although this grammar does not give the transitive posture paradigms for the stative verbs. This pattern is also different from that found in UNT, where the stative *-nan* is present in all stative posture verbs with plural subjects (Beck 2011a). Since it is difficult to elicit these constructions outside of context, this anomaly could also have resulted from confusion during elicitation and may require further investigation.

Dynamic forms of posture verbs

Dynamic forms of stative posture verbs are derived with the inchoative prefix *ta-* which forms a new verb stem indicating that the subject comes into the posture expressed by the stative base. The derived dynamic forms of the posture verbs take aspectual inflections for all aspects just like regular Class 1 (vowel-final) dynamic stems, as demonstrated for the imperfective aspect in Table 44, where the imperfective suffixes have been highlighted in bold.

Table 44: Dynamic forms of posture verbs derived with the inchoative prefix *ta-* in the imperfective aspect

	<i>tawí:</i> ‘sit down’	<i>tayá:</i> ‘stand up’	<i>tamá:’</i> ‘lie down’	<i>tawa’ká’</i> ‘go up’
1SG	<i>i’ktawilá</i>	<i>i’ktayá</i>	<i>i’ktamá:’</i>	<i>i’ktawa’ká’</i>
2SG	<i>tawiláya’</i>	<i>tayá:ya’</i>	<i>tapá:ya’</i>	<i>tawaká’ya’</i>
3SG	<i>tawilá</i>	<i>tayá:</i>	<i>tamá:’</i>	<i>tawa’ká’</i>
1PLEXC	<i>i’ktawila:ya’:uj</i>	<i>i’ktaya:ya’:uj</i>	<i>i’ktama:ya’:uj</i>	<i>i’ktawa’ka’ya’:uj</i>
1PLINC	<i>tawila:ya’:uj</i>	<i>taya:ya’:uj</i>	<i>tama:ya’:uj</i>	<i>tawa’ka’ya’:uj</i>
2PL	<i>tawilaya:’tít</i>	<i>taya:ya:’tít</i>	<i>tapá:ya:’tít</i>	<i>tawa’ka’ya:’tít</i>
3PL	<i>tatawilá</i>	<i>tatayá:</i>	<i>tatamá:’</i>	<i>tatawa’ká’</i>

Table 44 illustrates that the dynamic forms of the derived posture verbs take aspectual inflections like regular Class 1 verbs (see §5.2.1.1) with the imperfective suffix *-ya(:)* in all forms, and a zero affix in those stems that do not take person agreement suffixes (i.e. 1SG and 3SG/PL subject forms). The verb forms for *tamá:’* ‘lie down’ with second-person singular and plural subjects are formed by stem suppletion. The dynamic forms of the posture verbs do not take the stative plural *-nan* with plural subjects.

Dynamic forms of the posture verbs exhibit inflection for the perfective aspect in (685), the progressive in (686), and the perfective of the optative mood in (687).

(685) *Tzi:’swánli’. Tamá:’lh sqá’ta’ nai’xtáma’.*
 tzi:’swán–li’ ta–ma:’–**lh** sqá’ta’ nak=i’x–táma’
 nightfall–PFV INCH–lie–PFV child LOC=3POSS–bed
 ‘It became dark. The boy lied down on the bed.’ [FAS: Frog Story 3]

(686) *Tama:’má:’.*
 ta–ma:’–**ma:’**
 INCH–lie–PROG
 ‘S/he is lying down’

(687) *Katawila’!*
 ka–ta–**wíla’**
 OPT–INCH–sit:2SG.SUB:PFV
 ‘Sit down!’

Posture verbs are found in complex verb stems that result in a stative progressive

aspectual reading. For example, the prefixal element *a'qsa:-* (*a'q-* ‘head’ *sa:* ‘stuck’) combines with the posture verb *wi:* ‘sit’ and *ya:* ‘stand’ to form the complex verb stem *a'qsa:wí:* ‘X is stuck sitting’ and *a'qsa:yá:* ‘X is stuck standing’. The new verb complex expresses the sense of being in a prolonged position as denoted by the base. These complex stative stems become dynamic with the inchoative *ta-* prefixed to the posture verb *a'qsa:tawilá* ‘X gets stuck in a sitting position’. Table 45 illustrates the person and number inflection of the complex posture stem using *wi:* ‘sit’, as well as its dynamic forms. The stative base has been highlighted in bold in the first column of the table, while the inchoative prefix rendering a dynamic stem has been highlighted in the second column.

Table 45: Stative and dynamic forms of verb formatives (*wi:* ‘sit’)

	Stative	Inchoative
	<i>a'qsa:wí:</i> ‘be stuck sitting’	<i>a'qsa:tawilá</i> ‘get stuck sitting’
1SG	<i>i'ka'qsa:wí:</i>	<i>i'ka'qsa:tawilá</i>
2SG	<i>a'qsa:wíla'</i>	<i>a'qsa:tawíla'</i>
3SG	<i>a'qsa:wí:</i>	<i>a'qsa:tawilá</i>
1PL_{EXC}	<i>i'ka'qsa:wíla:náuj</i>	<i>i'ka'qsa:tawílayá:uj</i>
1PL_{INC}	<i>a'qsa:wíla:náuj</i>	<i>a'qsa:tawílayá:uj</i>
2PL	<i>a'qsa:wíla:nantít</i>	<i>a'qsa:tawílaya:'tít</i>
3PL	<i>taa'qsa:wíla:nán</i>	<i>taa'qsa:tawilá</i>

The stative uses of the posture verbs (column 1) in Table 45 do not vary for aspect. These complex stative stems inflect like other stative posture verbs do and take the plural *-nan* in plural subject forms. In the derived dynamic forms (column 2), the complex verbs display aspectual inflections like regular Class 1 (vowel-final) verbs, which takes an overt suffix *-ya:* on those forms with person agreement suffixes in the imperfective aspect, as shown in Table 45.

Functions of stative posture verbs

Posture verbs express configurations of a compact shape related to ‘sitting’, an upright vertical extension related to ‘standing’, and a horizontal elongation associated with ‘lying’ (Newman 2002). These properties have also been described as differing on visual clines with greater visibility connected with standing and least visibility with lying (standing > sitting > lying) (Rice 2002:63). Although posture verbs may indicate different senses of the configuration or location of a person or thing, they are commonly used in locative and existential constructions that express FIGURE-GROUND relations as described in Talmy (2000). In Talmy (2000), a FIGURE is taken to be the variable or moveable entity in the scene which can be located in relation to a GROUND, an invariable or stationary reference object to which the FIGURE’s location can be characterized. In ZT, the posture verb is chosen based on the posture or configuration of the FIGURE, which is expressed by the subject of the clause, as exemplified in (688)-(689).

(688) *Choj mat laqtzilh a'ntzá'. Mat ya: a'ntzá' mat ya: sikwalán.*

choj mat laqtzín–lh a'ntzá' mat ya:
now QTV see–PFV over.there QTV stand

a'ntzá' mat **ya:** sikwalán
over.there QTV **stand** holy.statue

‘Now, it’s said he saw it, over there, it’s said the holy statue stands over there.’
stands over there.’ [SLO: Cuentos 106–107]

(689) *I'xta:pá:n pusá:nto ya: ki'wí'.*

i'x–ta:pá:n pusá:nto **ya:** ki'wí'
3POSS–side church **stand** tree

‘The tree is beside the church.’

Lit. ‘The tree stands to the church’s side.’ [FAS: TRPS #49]

The stative posture verbs in (688)-(689) function as existential predicates with the meaning of ‘X is/exists’, where the posture verb also conveys the configurational properties of the FIGURE. The verb *ya:* ‘stand’ in (688) signals that the subject, the statue of San Manuel, in this context is literally in an upright standing position. The posture verb is selected by the extended vertical properties of the FIGURE, the tree, in (689), located in relation to the church, which is the GROUND object.

The stative stem *wa'ká'* 'hang, high up' is also selected by the position of the FIGURE, the variable entity, which is expressed by the subject. The FIGURE, expressed by the subject of the clause, is located relative to the GROUND, the reference object. The verb *wa'ká'* signaling FIGURE-GROUND relations is shown in (690)-(691), where it has been highlighted in bold.

(690) *Sqá'ta' i'xwa'ká' naxa'kpú:n jú:ki'.*

sqá'ta' i'x-**wa'ká'** nak=i'x-a'kpú:n jú:ki'
 child PST-**be.high.up** LOC=3POSS-head.crown deer
 'The boy was hanging off the deer's head.' [FAS: Frog story 30]

(691) *Cha:'tín chi'xkú' wa'ká' xqé:n laqatín chik.*

cha:'tín chi'xkú' **wa'ká'** i'x-qe:n laqa-tín chik
 NUM.CLF-one man **be.high.up** 3POSS-back NUM.CLF-one house
 Lit. 'One man is on the back of a house.' [RLP: TRPS #34]
 'The man is up on the roof of the house.'

The example in (690) shows *wa'ká'* 'hang, high up' indicates that the subject (FIGURE) is hanging over the GROUND expressed by the noun phrase *i'xa'kpú:n jú:ki'* 'deer's head,' which is introduced into the clause with the locative clitic *nak=*. In (691), the subject *cha:'tín chi'xkú'* 'one man' is located standing on the roof of a house, referred to literally as *i'xqé:n* 'its back'. The body-part noun may not necessitate the locative clitic as it is used relationally similar to adpositions and thereby introduce a locative phrase into the predicate.

The verb *wi:* is selected literally in (692), but it is also used as a default posture verb for things that do not have a clear axial orientation or configuration, as shown in (693).

(692) *I'xtampí:n mé:sa wi: mí:stu'.*

i'x-tampí:n mé:sa **wi:** mí:stu'
 3POSS-underside table **sit** cat
 'The cat is under the table.'

Lit. 'The cat sits under the base of the table.' [MCC: TRPS #31]

(693) *Mat wi: xka:n laqtzilh ta'laná.*

mat **wi:** xka:n laqtzín-lh ta'laná
 QTV **sit** water see-PFV hunter
 'It is said the hunter saw (where) there is water.'

Lit. 'The hunter saw (where) the water sits.' [SLO: Cuentos 105]

In (692), the subject, *mí:stu'* ‘cat’ is literally in a sitting position. In (693), the default posture *wi:* ‘sit’ is used to form the existential predicate with the subject *xka:n* ‘water’, which had miraculously sprung up on the mountainside.

The stative posture verb *wi:* also has a number of conventionalized or idiomatic uses involving being, existing, and living, as shown in (694)-(697). As was shown in Table 42, the posture verb *wi:* takes an imperfective stem *wilá:* in forms with plural subjects.

(694) *Wi:kuschá qo:lujtzín.*

wi:–kus–cha qo:lujtzín
sit–still–DIST old.man
 ‘The old man is still alive.’ [RVA: Cuentos 44]
 Lit. ‘The old man still sits.’

(695) *Chi: xi'kwila:náuj a'jnanú' lakapá:ni xi'kwila:náuj.*

chi: i'x–i'k–**wilá:**–nan–uj a'jnanú' lakapá:n=i
 PTCL PST–1SG.SUB–**sit**–ST.PL–1PL.SUB over.there hillside=JUNCT

i'x–i'k–**wilá:**–nan–uj
 PST–1SG.SUB–**sit**–ST.PL–1PL.SUB
 ‘That’s where we lived, over there, on the hillside is where we lived.’ [SLO: Cuentos 24]

(696) *Chi:'x taya:nán wa'chí'. Xwiláka' wa'tzá'.*

chi: i'x–ta–ya:–nan wa'chí' i'x–**wilá**–ka' wa:'tzá'
 PTCL PST–3PL.SUB–stand–ST.PL like.this PST–**sit**–IDF:PFV here
 ‘There were (big trees), like this; it could have been like that here.’
 Lit. ‘(Big trees) stood; it could have been like that here.’ [SLO: Cuentos 30]

The example in (694) shows that the underived stative verb *wi:* ‘sit’ is used to mean ‘X is alive, X exists’ and is suffixed with two adverbial-like morphemes, *-kus* ‘still’ and *-chá* ‘distal’ described in §6.2.7. In (695), *wilá* is inflected for the first-person plural exclusive subject and is used in the context with the meaning of ‘X lives in a place’. The present tense irrealis form of the verb in (696), which is formed by the past tense prefix *i'x-* in combination with the perfective form of the indefinite subject suffix *-ka'* (cf. §5.2.3.4), uses the posture verb *wi:* with the meaning ‘be, exist’ in a hypothetical situation. The verb *wi:* ‘sit’ is the default posture for referring to things that do not have a physical orientation and the verb chosen for expressing ‘be living’.

Additionally, the posture verb *wi*: ‘sit’ is chosen as the default posture for the compound verb used to ask about one’s well-being, as exemplified in (697)-(698).

(697) *Chu: lawíla'?*

chu: **la-wíla'**
 how **be-sit:2SG.SUB**
 Lit. ‘How do you sit?’
 ‘How are you?’

(698) *Tzey klawí:*

tzey i'k-**la-wi:**
 well 1SG.SUB-**be-sit**
 Lit. ‘I sit well.’
 ‘I am fine.’

In (697)-(698), the compound verb *lawí:* (*la* ‘do’ + *wi*: ‘sit’) is used when inquiring about or responding to questions about a person’s physical or mental state. Compounds of *la* ‘be’ with a stative posture verb may be used exclusively for animate things for which the state is expected to be transitory (Beck, p.c.); however, this requires further verification for ZT.

Stative posture verbs incorporate body-part roots, forming transitive verbs that are used to create intrinsic locative expressions (Pederson et al. 1998). In these constructions, the posture verb is selected based on the configuration of the FIGURE, while the body-part root expresses the sub-part of the GROUND that the FIGURE is located, as shown in (699)-(700).³⁰

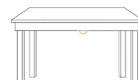
(699) *Ta:pa:wí: i'xtapatulát puská:t.*

ta:pa:-wi: i'x-ta:pa:tulát puská:t
side-sit 3POSS-belt woman
 Lit. ‘Her belt side-sits the woman.’
 ‘The belt is on the woman’s waist.’ [FAS: TRPS #42]



(700) *A'qtín mésa tampi:wa'ká' laqatín li:tzaqát.*

a'q-tín mésa **tampi:-wa'ká'** laqa-tín li:tzaqát
 NUM.CLF-one table **underside-be.high.up** NUM.CLF-one gum
 Lit. ‘The gum underside-hangs the table.’
 ‘The gum is stuck under the table.’ [RLP: TRPS #53]



³⁰ Examples (699)-(703) were elicited using the *Topological Relations Picture Series* (TRPS) (Bowerman & Pederson 1992) created by the Language and Cognition Department at the Max Plank Institute of Psycholinguistics; the numbers next to the speaker code correspond with the number of the picture stimuli.

The verb *wi*: ‘sit’ is selected as the default posture in (699) and denotes that the belt (the FIGURE) is wrapped around the woman’s waist, which is referred to by the bound body-part root *ta:pa*:- ‘side of one’s body’; the body-part term is inferred to select a sub-part (the waist) of the GROUND (the woman). In (700), the gum (FIGURE) is located up high, or hanging off the underside of the table-top. The bound body-part root *tampi*:- ‘underside’ refers to the sub-part of the GROUND (the table) where the FIGURE is located, and whose position is denoted by *wa'ká* ‘be high up, hang’.

A number of complex stative verbs are formed with a body-part root combined with a bound locative root and a stative posture stem to form a compound verb, as exemplified in (701)-(703).

(701) *Lakanu:wa'ká' laqatín taqe:nút.*

laka-nu:-wa'ká' laqa-tín taqe:nút
face-on-hang NUM.CLF-one jacket
 ‘The jacket is hanging (on the wall).’ [FAS: TRPS #09]



(702) *Qe:nu:yá: pu:túka.*

qe:-nu:-ya: pu:túka
back-be.on-stand ladder
 ‘The ladder leans (on the wall).’ [FAS: TRPS #58]



(703) *Cha:tín chi'chí' lakaxtuwí: nai'xchík.*

cha:-tín chi'chí' **laka-xtu-wi:** nak=i'x-chik
 NUM.CLF-one dog **face-be.out-sit** LOC=3POSS-house
 ‘A dog sits in its house facing out.’ [FAS: TRPS #71]



The example in (701) demonstrates the bound locative root *-nu*: ‘be on’ combines with *laka*- ‘face,’ which forms the stative stem *lakanú*: meaning ‘be on a flat vertical surface’. The stative stem *lakanú*: combines with the posture verb *wa'ká* ‘be high up, hang’ which forms the compound verb *lakanu:wa'ká* ‘X is hanging on a flat vertical surface.’ The stative stem *qe:nú*: in (702) takes the body-part root *qe*:- ‘back’ and positional root *-nu*: ‘be in, on’ to form a stative stem meaning ‘be leaning against (a vertical surface)’. The compound *qe:nu:yá*: takes the posture stem *ya*: ‘stand’ which reflects the long horizontal orientation of the ladder. The example in (703) involves the bound root *-xtu* ‘be out’ combining with *laka*- ‘face’ to form the stative verb *lakaxtú* ‘be facing out’; the stative stem *lakaxtú* combines with *wi*: ‘sit’ to form a compound verb *lakaxtuwí*: ‘X is sitting

facing outwards'. The compound stative verbs result in a stative progressive aspectual reading, expressing the sense of the subject (or FIGURE) being in a prolonged position in the posture denoted by the posture verb, which constitutes the right-hand member of the compound.

In summary, stative verbs constitute a subclass of verbs that are imperfective in form and function and are formally distinguished from dynamic verbs by not varying in aspectual inflection. The class of stative verbs has been further divided into two subclasses based on functional properties: ordinary statives and posture statives. Ordinary stative verbs have positional and locative meanings, while stative posture verbs are a closed class of four posture stems which are used as existential and locative predicates, and form some idiomatic constructions. Inflectional forms of stative verbs display some irregularities, such as suppletion and variability in the marking of the stative plural in forms with plural subjects. Derivational properties of stative stems are productive and regular. Stative stems formed via compounding and body-part incorporation result in more complex stative verbs. Stative stems are derived into dynamic verbs with the inchoative and causative prefixes, which can then take the variety of aspectual inflections similar to regular dynamic verbs as described in §5.2.1. The next section on voice describes three different inflectional categories affecting verbs in ZT which alter the diathesis of the verb and show some distinct patterns of agreement in the marking of person and number.

5.4 Voice

Up until this point, grammatical agreement has been described for verb forms in the default or unmarked active voice, as shown in §5.2. However, ZT has some grammatical categories that have valency-altering and voice-like effects on the diathesis of the verb. In the Totonacan linguistic literature, the most common terms for these morphemes which are generally cognate across the family are the indefinite subject marker *-kan*, which in many languages also marks the reflexive; the indefinite object marker *-nVn*, also referred to as the antipassive; and the reciprocal marker *la:-*. In Zihuateutla, the indefinite subject (IDF) marker *-kan* has several functions: it expresses an indefinite or agentless actor or it forms a reflexive with transitive verbs. The indefinite object marker, or the antipassive (AP)

suffix *-nVn*, in ZT expresses the idea that the action denoted by the verb affects an (implied) indefinite or generic object or gives the verb an activity-like reading. The reciprocal (RCP) prefix *la:-* is used in expressions of subject-object reciprocity in verb forms with plural subjects.

While these are the labels that have been used by Totonacists, the paradigmatic distribution and functions of these forms vary considerably throughout the language family. The descriptions of these categories as expressing grammatical voice is used here following other Totonacan languages for which the system in ZT shows some resemblance (Tlachichilco Tepehua: Watters 1988; Filomeno Mata Totonac: McFarland 2009; Upper Necaxa Totonac: Beck 2014). The verb template in Figure 8 illustrates the relative order in which these markers appear on the verb stem. This template adds to the template in Figure 7 the position of those morphemes that convey grammatical voice in ZT. The angled brackets $\langle \rangle$ in the table indicates that the affix may appear in more than one slot.

Tense/Mood	Person	Mood	Person		Reciprocal	Derivation	Root	Derivation	Voice	Aspect	Inflection	Voice	Person	Aspect		
PST	1SUB	POT	PL.OBJ	3PL.SUB	RCP	Derivation	Root	Derivation	AP	IMPF	ST.PL	\langle IDF \rangle	1PL.SUB	PFV		
FUT	1OBJ				\langle IDF \rangle				PROG						2SG.SUB	
OPT									PF						2PL.SUB	
													2OBJ			

Figure 8: Order of affixes for agreement, TAM, and voice

The verb template in Figure 8 indicates that the indefinite subject marker *-kan* appears in two different positions. Indefinite subject marking appears closer to the stem before other aspectual affixes, as seen in (704). The indefinite object, hereafter the antipassive *-nVn*, appears closer to the root in (705), and the indefinite *-kan* appears in final position where it forms a portmanteau with the perfective aspect.

(704) *Pu'tzaqo:kani:'tzá' talhpáni...*

pu'tza-qo:-**kan**-ni:'t=tzá' talhpán≡i
look.for-TOT-**IDF**-PF=now rock≡JNCT

'They_{IDF} had already looked for all the rocks...' [SLO: Cuentos 99]

(705) *Lakatzunáj tzu'tzunumá:'ka'*

laka-tzunáj tzu'tzú-**nun**-ma:'-ka'
face-close suck-AP-PROG-**IDF:PFV**

'Someone is smoking nearby.'

The suffix *-kan* in (704) and (705) expresses the fact that the subject is an indefinite actor, similar to 'someone' or the impersonal 'they' in English. The antipassive in (705) attributes an activity-like meaning to the verbal predicate, which in this example is being performed by an indefinite actor expressed with *-kan*.

The reciprocal prefix *la:-* appears closer to the verb stem than other inflectional prefixes, as seen in (706).

(706) *Xtala:ta:'qóta. Xtala:ma:qotú:n.*

i'x-ta-**la:-**ta:'-qot-a i'x-ta-**la:-**ma:-qot-u:≡n
PST-3PL.SUB-**RCP**-CMT-drink-IMPF PST-3PL.SUB-**RCP**-CS-drink-CS≡JNCT

'They used to drink together; they used to make each other drink.'

[SLO: Cuentos 61]

The reciprocal *la:-* combines with the applied comitative form of the verb *ta:'qó't-* 'drink with someone' (cf. 6.1.2.3) and the causative form *ma:qotú:* 'make someone drink' (cf. 6.1.1) in an expression of reciprocity in (706). This section describes the form and functions of the indefinite subject/reflexive suffix *-kan* (see §5.4.1), the antipassive suffix *-nVn* (see §5.4.2), and the reciprocal prefix *la:-* (see §5.4.3), all of which may have valency-reducing properties or voice-like effects on the diathesis of the verb.

5.4.1 Indefinite Subject

The indefinite subject suffix *-kan* in ZT has two functions: it either attributes an agentless or indefinite subject reading to the verb or forms a reflexive construction. Verbs marked with *-kan* show some irregular patterns in grammatical agreement. In particular, the suffix *-kan* marks the UNDERGOER of transitive stems with a first-person singular or third-

person plural participant using object morphology, resembling forms that could be more literally glossed as *someone verbs me* or *someone verbs them*. On the other hand, verbs with *-kan* mark second-person singular UNDERGOERS with subject morphology, which may make a passive-like gloss such as *you are done* more appropriate. Table 46 illustrates the indefinite subject forms with the verb *chi:* ‘tie something,’ which out of context is ambiguous between a passive-like, agentless subject reading (‘X is tied up’), an indefinite subject (‘someone tied X up’), or a reflexive interpretation (‘X ties X-self up’). In Table 46, the indefinite suffix is *-kan* in the imperfective aspect and forms part of a portmanteau *-ka’* (IDF:PFV) in the perfective.

Table 46: Indefinite voice: person and number of imperfective and perfective aspect

	Imperfective	Perfective
1SG	<i>kinchi:'kán</i>	<i>kinchi:'ka'</i>
2SG	<i>chi:'kána'</i>	<i>chi:'ka'</i>
3SG	<i>chi:'kán</i>	<i>chi:'ka'</i>
1PL	-	-
2PL	-	-
3PL	<i>ka:chi:'kán</i>	<i>ka:chi:'ka'</i>

The dash (-) in Table 46 represents paradigmatic gaps in the person paradigm; speakers would not produce first-person plural or second-person plural indefinite subject forms with the suffix *-kan* — a pattern that is found within the Northern branch of the family (Apanantilla Totonac: Reid 1991, Upper Necaxa: Beck 2014: 25).³¹ There is also some ambiguity in indefinite verb forms between second-person singular and third-person singular PATIENTS in the perfective aspect. Since third-person singular subjects and objects are unmarked (or zero-marked), these forms are ambiguous as to whether the verb stem

³¹ When speakers were prompted for first-person plural and second-person plural forms, they would produce the following compositional forms without *-kan*:

(a) *Kinán kinka:tachi:'ni'*
 kinán kin-ka:-ta-chi: '-ni'
 PRN.1PL 1OBJ-PL.OBJ-3PL.SUB-tie-2OBJ
 ‘They tied us up.’

(b) *Wi'xinán ka:tachi:'ni'*
 wi'xinán ka:-ta-chi: '-ni'
 PRN.2PL PL.OBJ-3PL.SUB-tie-2OBJ
 ‘They tie you all up.’

shows agreement for the UNDERGOER with subject or object morphology. However, in first-person singular and third-person plural forms, as seen in Table 46, the PATIENT or UNDERGOER is expressed as the object, as in (707)-(708).

(707) *Kinchi: 'kán.*

kin-chi: '-**kan**-Ø

1OBJ-tie-IDF-IMPF

(i) 'Someone ties me up. / I am tied up.'

(ii) 'I tie myself up.'

(708) *Ka:chi: 'kán.*

ka:-chi: '-**kan**-Ø

PL.OBJ-tie-IDF-IMPF

(i) 'Someone ties them up. / They are tied up.'

(ii) 'They tie themselves up.'

The expression of the PATIENT or UNDERGOER is marked by object morphology on the verb stem in (707)-(708) and is ambiguous between an indefinite actor or passive-like interpretation and the reflexive.

Second-person singular forms with the indefinite *-kan*, however, demonstrate that the PATIENT or UNDERGOER is expressed using subject morphology, as in (709).

(709) *Chi: 'kána'.*

chi: '-kan-a'

tie-IDF-IMPF:2SG.SUB

(i) 'You are tied up.'

(ii) 'You tie yourself up.'

The example in (709) shows regular second-person singular subject inflection with penultimate stress and a final-short laryngeal vowel as described in §5.1.1; a literal gloss reflects the more passive-like reading of the clause.

The indefinite suffix *-kan* can also apply to intransitive verbs. With intransitive stems, indefinite verb forms are only found in the third person and attribute an indefinite or generic interpretation to the clausal subject (cf. (710)-(711)).

(710) *Ni:*
 Ø–ni:–Ø
 3SG.SUB–die–IMPF
 ‘S/he dies.’

(711) *Ni:kán.*
 ni:–**kan**–Ø
 die–**IDF**–IMPF
 ‘Someone dies. / They_{IDF} die.’

The indefinite subject marker *-kan* on the intransitive verb *ni:* ‘die’ in (711) signals an action or event that affects an indefinite or generic actor(s). These forms are usually translated into Spanish using the reflexive, or passive, or have an indefinite third-person plural subject reading similar to *people* or the impersonal *they* in English.

Verbs marked with the indefinite *-kan* function to foreground the object of a transitive verb and background the subject in discourse and narratives, as seen in (712)-(714).³²

(712) *Maqa:stzá' lha: tu: i'xa'nán tu: i'xwa'kán. Ma'qtín ka:'taxkamaní:n li:stakaní:t.*
 maqa:s=tzá' lha: tu: i'x–a'nán tu: i'x–wa'–**kan**–Ø
 long.ago=now NEG PTCL PST–exist NREL PST–eat–**IDF**–IMPF

ma'q–tín ka:'–taxkamaní:n li:–stak–**kan**–**ni:t**
 NUM.CLF–one PLC–poverty INST–grow–**IDF**–**PF**
 ‘A long time ago, there was nothing that could be eaten; at one time, people have grown up in poverty.’ [MCC: Story of Past 1-2]

(713) *Ma:firmajli:ni:ka' laqatín kapsnát.*
 ma:–firmaj–li:–ni:–**ka'** laqa–tín kapsnát
 CS–sign–VBLZ–CS–**IDF:PFV** NUM.CLF–one paper
 ‘They were made to sign a document.’ [SLO: Cuentos 64]

(714) *I'xka:siyanqa'ni'má:'ka'.*
 i'x–ka:–siyanqá'n–ni'–**ma:'–ka'**
 PST–PL.OBJ–be.afraid–DAT–**PROG**–**IDF:PFV**
 ‘They were being frightened (by her).’ [MCC: Llorona 3]

³² The full form of the indefinite *-kan* appears with the imperfective and perfect aspect, as in (712) and the suffix is diachronically realized as a portmanteau of the indefinite and perfective **-kan + *-li' > *-ka'* in the perfective (713) and the progressive aspect (714).

In (712), *wa'kán* ‘someone eats X’ appears in the headless relative clause, and foregrounds the object *lha: tu:* ‘nothing,’ which appears outside of the relative clause, meaning something like ‘nothing that could be eaten’ or ‘nothing existed that people could eat’. The intransitive verb form *li:stakani:'t* ‘they_{IDF} have grown up’ shares the previously mentioned generic subject, which refers to people who were raised in the community in this context, and the event of having grown up in poverty is foregrounded. In (713), the indefinite form of the causative verb, *ma:firmajli:ni:ka'* ‘Y was made to sign Z,’ backgrounds the CAUSER subject of the active-voice form of the verb, *ma:firmajli:ni:* ‘X makes Y sign Z’, and foregrounds the object, which in this context refers to the community members who were mandated to sign a government document. In (714), the derived dative verb *siyanqá'ni'* ‘X frightens Y’ in the indefinite form with *-ka'* has a passive habitual reading, where the subject (the witch, known as *La Llorona*, a female ghost who wails at night looking for her children) has been backgrounded and the UNDERGOERS — those who were afraid — are foregrounded. The foregrounding and backgrounding of the indefinite voice can be further seen in the narratives in Appendix E.

The backgrounding of the indefinite subject with *-kan* is also used in narratives in order to maintain the same subject across clauses in a topic chain, as seen in the excerpt from a narrative in (715).

(715) *U:tzá' xla li:wani'ka' municipio de Zihuateutla. Chi:n tzukúka' a'nú: taa'qawani'káni chinkáni wa:' nakxqalhpú:n sipéji qe:stí:n. Tzukúka' ma:chiki:ni:kán tzukúka' a'náli' kiristiano. Chi: a'ntzá' tzukúka' a'nú: pa'qlhkán.*

- (a) u:tzá' i'x-la li:-wan-ni'-ka' municipio de Zihuateutla
 PRN.3SG PST-be INST-say-DAT-IDF:PFV municipio de Zihuateutla
- (b) chi:≡n tzukú-ka' a'nú: taa'qawani-kan≡i
 PTCL≡JUNCT begin-IDF:PFV so.then be.scattered-IDF≡JUNCT
- (c) chin-kan≡i wa:' nak=i'x-qalhpú:n sipéj≡i qe:stí:n
 arrive-IDF≡JUNCT here LOC=3POSS-top mountain≡JUNCT ridge
- (d) tzukú-ka' ma:-chikí:-ni:-kan tzukú-ka' a'nán-lh≡i kristiano
 begin-IDF:PFV CS-build.houses-CS-IDF begin-IDF:PFV exist-PFV≡JUNCT person
- (e) chi: a'ntzá' tzukú-ka' a'nú: pa'qlh-kan
 PTCL over.there begin-IDF:PFV so.then blossom-IDF

‘(a) That’s why it was called the municipality of Zihuateutla. (b) When they_{IDF} started to move around, (c) they arrived here to the top of the mountain ridge. (d) They_{IDF} started making houses and people began living here. (e) So then they_{IDF} began having children over there.’ [Story of Community 28-31]

The speaker in (715) uses the indefinite subject form of the verbs in order to maintain the same subject throughout the discourse, which in this context refers to the people who first inhabited the town of Zihuateutla. The verb forms with *-kan* seem to emphasize or foreground the events as they occur while downplaying the participants or AGENTS of the actions expressed by the verb. Even though the verbs do not show agreement for a plural indefinite participant, the indefinite subject in these clauses take a plural generic reading.

The example in (716) further shows that the backgrounded subject of indefinite verbs with *-kan* is not an indefinite or generic subject and that the agentless subject reading may be more appropriate. In this excerpt from the Chameleon story, the topic, the anthropomorphized chameleon named Jesus, cannot change the color of his body and is made fun of by his two friends, all of whom have been well established in the narrative.

(716) *Lha: palájen taxa:palí:lh. Chi: a'ntzá' chu: wa'chí' li:kilhchuya:paláka'.*
Li:kilhchuya:paláka' tzukúka' li:kilhchuya:kán.

- (a) lha: paláj≡in taxa:palí:~lh
 NEG fast≡JUNCT change~PFV
- (b) chi: a'ntzá' chu: wa'chí' li:~kilh~chuyá:~pala~ka'
 PTCL over.there PTCL like.this INST~mouth~crazy~RPT~IDF:PFV
- (c) li:~kilh~chuyá:~pala~ka' tzukú~ka' li:~kilh~chuyá:~kan
 INST~mouth~crazy~RPT~IDF:PFV begin~IDF:PFV INST~mouth~crazy~IDF

‘(a) [Jesus] couldn't change quickly. (b) And over there, like that, he was made fun of again. (c) He was made fun of and made fun of again.’ [RLP: Chameleon 49-51]

The indefinite forms of the verbs in (716) help track the referents by maintaining Jesus as the topic of the ridiculing event. The backgrounded subjects, who were the AGENTS of the teasing event, cannot be interpreted as an indefinite or generic actor (i.e. *someone/people made fun of Jesus*) in this context since they are firmly established as definite referents in the narrative. The indefinite form of the verb then has an agentless or passive-like reading, such as ‘X was made fun of’, which foregrounds the undergoer. While the functions of the suffix *-kan* in foregrounding and backgrounding, reference-tracking, and establishing and maintaining topic chains is beyond the scope of this dissertation, a more detailed analysis for the morpheme that is cognate with the indefinite subject suffix can be found in Watters (2017a: 170) for Tlachichilco Tepehua.

Summing up, the indefinite subject marker *-kan* attributes an agentless or indefinite/generic actor reading to the predicate or forms a reflexive construction. In discourse and narratives, these forms are used in foregrounding and backgrounding and maintaining topic chains. It is important to note that in some Totonacan languages, verbs with indefinite subject marking may take a definite, overt, or referential subject as in Huehuetla Tepehua in Kung (2007); however, in other Totonac languages, the indefinite subject is described as a passive in Watters (1988: 203) for Tlachichilco Tepehua and a passive-like construction in MacKay (1999: 191) for Misantla Totonac, since the object of the active voice form of the verb is expressed with subject morphology in indefinite stems with *-kan*, indicating that the object has been promoted to a subject position. In Beck (2014), the suffix that is cognate in UNT is described as a subject suppressive voice. In ZT,

speakers would not accept indefinite forms with third-person plural subject morphology on the verb although I never explicitly tested whether it can take an indefinite or generic nominal — noun (phrase) or pronoun — argument. Since third-person subjects and objects are zero-marked, we would need to see if speakers accept indefinite verb forms with an overt indefinite noun phrase. Furthermore, the use of object morphology for first and third-persons in the indefinite is found in other languages in the Northern branch (Upper Necaxa: Beck 2011a, Apapantilla: Reid 1991: 35-36), but differs from other Totonacan languages which use subject morphology for first-persons in indefinite verb forms, which helps disambiguate the reflexive uses of the voice from the indefinite subject ones (Misantla Totonac: MacKay 1997: 191–192, MacKay and Trechsel 2008, Lowland-Sierra languages: McQuown 1990: 163, Troiani 2004: 83, Beck 2004). The absence of first and second-person plural forms with *-kan* also seems to be a property of the Northern branch (Upper Necaxa: Beck 2011a, Apapantilla: Reid 1991: 36) and is quite distinct from the patterns found in other Totonacan languages which do have indefinite first or second-person plural forms (Filomeno Mata: McFarland 2009: 188, Pisaflores Tepehua: MacKay & Trechsel 2010:89).

5.4.2 *Indefinite Object/Antipassive*

The indefinite object or antipassive in ZT has several functions: it either expresses an action affecting an indefinite or generic object, or it attributes an activity-like (rather than episodic) reading to transitive verbs. The term indefinite object and antipassive are commonly used by most Totonacists (Levy 2002b, MacKay 1999, McQuown 1990, Kung 2007a, McFarland 2009, Watters 2017a), although the descriptions of the cognate marker vary considerably from language to language. The label “indefinite object” has been applied to the cognate suffix *-nVn* in some Totonacan languages, where the indefinite form of the verb can take an overt object argument or overt object agreement on the stem (MacKay 1999, Levy 2002b, Kung 2007a). The term antipassive is used to describe this category in ZT following Watters (1988, 2017a) for Tlachichilco Tepehua, McFarland (2009) for Filomeno Mata Totonac, and Beck (2014) for UNT, since these forms do not appear with plural object morphology on the verb or an overt indefinite object argument.

Similar to these languages, in ZT the suffix seems to target the object, rendering a transitive verb intransitive.

The antipassive suffix *-nVn* (abbreviated as AP) functions to background the object and thereby foregrounding the subject of the verb. The transitive verb in the antipassive form in each of the clauses in (717)-(719) all have a generic or indefinite (implied) object reading which is downplayed or backgrounded.

(717) *Pero ka:'makán i'xcha'pa:nán nakxwá:'ti'. I'xcha'pa:nán chu: lha: na tu molíno.*

pero ka:'makán i'x-cha'pá:-**nan**-Ø nak=xwá:'ti'
but by.hand PST-mill-AP-IMPF LOC=metate

i'x-cha'pá:-**nan**-Ø chu: lha: na tu: molíno
PST-mill-AP-IMPF PTCL NEG still PTCL miller

'But they milled by hand in the metate. They milled since there was still no miller.'
[RVA: Cuentos 36]

(718) *A'ntzá' mat xatasu'yuní wankán. Kwan u:'tzá' li:ku'chu:nún tzamá: xka:n.*

a'ntzá' mat xa-ta-su'yú-ni wan-kan-Ø
over.there QTV DTV-INCH-visible-DAT say-IDF-IMPF

i'k-wan-Ø u:'tzá' li:-ku'chú:-**nun**-Ø tzamá: xka:n
1SG.SUB-say-IMPF PRN.3SG INST-cure-AP-IMPF that water

'It is said that over there, (the water) appeared; I say this is why that water cures.'
[SLO: Cuentos 108]

(719) *Tzamá: San Manuel ka'tzi:niyá:. Lakapa:stá'knayá:. Qa'lhí: i'xpoder.*

tzamá: San Manuel ka'tzi:-**nin**-ya: laka-pa:stá'k-**nan**-ya:
that San Manuel know-AP-IMPF face-think-AP-IMPF

qa'lhí:-Ø i'x-poder
have-IMPF 3POSS-power

'...that San Manuel knows and he thinks; he has power.'
[SLO: Cuentos de un abuelito 72]

The examples in (717)-(719) demonstrate that the suffix *-nVn* has three forms, *-nan*, *-nun*, or *-nin*, that undergoes vowel harmony with the quality of the last vowel of the verb stem.³³ In (717), the suffix *-nVn* attributes an activity-like reading to the verb by backgrounding

³³ There are some exceptions to the *-nVn* allomorphy of this marker; for example, the verb *xka* 'A bites X' takes the antipassive suffix *-yan* forming an intransitive stem *xkayán* 'A bites'.

the generic (implied) object of the transitive verb *cha'pá*: ‘mill something’ while foregrounding the activity performed by the subject. Similarly in (718), the applied instrumental form of the verb *li:ku'chú*: ‘A cures X because of Y’ takes the suffix *-nVn* which downplays an implied generic object ‘(cures) people’ while in (719), the antipassive form of the verb further helps maintain the foregrounded subject ‘San Manuel’ as the topic of the following clauses.

The primary object of transitive verbs with *-nVn* is not expressed as seen by comparing the sentences in (720) and (722), containing overt objects, with (721) and (723), which have covert objects, suggesting that the antipassive suffix in fact has a detransitivizing function.

(720) *I'ki:tama:wá:lh laqatín tati:nú:t, laqatín tzi:'n, ...*

i'k-ki:-tama:wá:-lh	laqa-tin	tati:nú:t	laqa-tin	tzi:'n
1SG.SUB-RT-buy-PFV	NUM.CLF-one	pants	NUM.CLF-one	shirt

‘I bought pants, a shirt...’ [FAS: Shopping List 12]

(721) *Milh laqatín kilhtamakúj puská:t a'lh tama:wa:nán nakpu:stá:'n.*

min-lh	laqa-tin	kilhtamakúj	puská:t	a'n-lh
come-PFV	NUM.CLF-one	day	woman	go-PFV

tama:wa:-nan-Ø	nak=pu:stá:'n
buy-AP-IMPF	LOC=store

‘There came one day when the woman went shopping at the store.’ [FAS: Shopping list: 3]

(722) *I'xmín ka:chi'pá'x ka:la'qta lakatzunajé:.*

i'x-min-Ø	ka:-chi'pá'	i'x-ka:-la'q-ta-laka-tzunajé:-Ø
PST-come-IMPF	PL.OBJ-catch	PST-PL.OBJ-ALL-DCS-face-near-IMPF

‘(The witch) used to come grab them when she would go near them.’ [MCC: Witch story 3]

(723) *Ki:chi'panán i'xta:tá' kilakstín. Li:jikwá' chi: li:miní a'qachóq acamayás pescados.*

ki:-chi'pá-nan-Ø	i'x-ta:tá'	ki-lakstín
RT-catch-AP-IMPF	3POSS-father	1POSS-children

li:jikwá'	chi:	li:-min-ni	a'qachóq	acamayas	pescados
scary	PTCL	INST-come-DAT	crayfish	crayfish	fish

‘The father of my children used to go fishing; it is scary how he brought crayfish and fish.’ [RVA: Cuentos 19-20]

The direct object arguments of the transitive verb *tama:wá:* ‘X buys Y’ are expressed by the overt noun phrases in (720). The verb in the antipassive *tama:wa:nán* in (721) does not seem to overtly express the direct object and has an activity-like reading, meaning going shopping, or buying things in general. In (722), the verb stem *chi'pá* ‘X grabs/catches Y’ takes an object argument that is marked on the verb with *ka:-* (PL.OBJ). The verb stem with the antipassive suffix *chi'panán* in (723) expresses the activity of trapping or catching things, which in this context, seems to derive a new verb meaning ‘going fishing’ as established by the following clause in the narrative. Again, in each of the clauses, the antipassive foregrounds the activity performed by the AGENT and backgrounds the implied object.

The example in (724) shows that the implied object backgrounded by *-nVn* may not be a generic or indefinite one.

(724) *Ki:tama:wá:lh tati:nú:t taqo:jnú:t e:' tacha:'nú:t wan qalhti:nín.*

ki:tama:wá:lh	tati:nú:t	taqo:jnú:t	e:'	tacha:'nú:t	wan
RT-buy-PFV	pants	hat	and	sock	say

qalhti:–**nun**–Ø

respond–AP–IMPF

‘She responds, I bought pants, a hat, and socks.’ [FAS: Shopping List 21]

In the excerpt from the narrative in (724), the woman responds to her husband whose participation in the story has been established. The antipassive suffix renders the verb intransitive *qalhti:nún* ‘s/he responds’ although the implied object has a definite referent in this context, namely her husband, and cannot be understood as generic or indefinite, i.e. **s/he responds to someone/people*.

The two systems of indefinite marking — the indefinite subject *-kan* and the antipassive *-nVn* — work closely together in discourse and narrative to background the event participants and foreground the actions, states, or events expressed by the verbs, as seen in the excerpt in (725).

(725) *Choj tzukúka' mat la'qwanankán a'lh kilhtamakúj. Tzukúka' mat la'qwanankán laka:'nánka' laka:'nánka' mat.*

- (a) choj tzukú-**ka'** mat la'qwan-**nan-kan** a'n-lh kilhtamakúj
 now begin-**IDF:PFV** QTV break.down-**AP-IDF** go-PFV day
- (b) tzukú-**ka'** mat la'qwan-**nan-kan**
 begin-**IDF:PFV** QTV break.down-**AP-IDF**
- (c) lak-ka: '-**nan-ka'** lak-ka: '-**nan-ka'** mat
 INTNS-cut-**AP-IDF:PFV** INTNS-cut-**AP-IDF:PFV** QTV

‘(a) Now, it’s said people began tearing down as the days passed; (b) it’s said people began tearing down. (c) They_{IDF} chopped and chopped, they say.’
 [SLO: Cuentos 117-118]

In the excerpt from a narrative in (725), the speaker tells how the first inhabitants of Zihuateutla cleared the land to build houses. The two systems of indefinite subject and object marking in the narrative sequence in (725) function together to background the event participants and highlight or foreground the actions expressed by the verb, while the backgrounded generic actors are maintained as the topic across the clauses.

It should be noted that the antipassive suffix is also found with intransitive verb stems, although in these forms the *-nVn* suffix has been described as completely fossilized or as giving the verb a habitual or atelic reading. In ZT, some of these intransitive verbs require the suffix to form an independent stem; otherwise, it is difficult to tell what the *-nVn* suffix contributes semantically to an intransitive base. The intransitive stems in (726)-(728) nevertheless have atelic and habitual senses.

(726) *Min kilaqxtaját kúma chu:wáj i'klaqtzima:tzá' chu:wáj tapala:xlanán.*
 min-Ø kin-laqxtaját kúma chu:wáj
 come-**IMPF** 1POSS-tears because now

i'k-laqtzin-ma:=tzá' chu:wáj tapala:xlá-**nan-Ø**
 1SG.SUB-see-**PROG=now** now get.expensive-**AP-IMPF**
 ‘My tears come out because now I am seeing that everything getting expensive.’
 [RVA: Cuentos 58]

(727) *Tu'jnúli jú:ki' chu:wáj chi: chichí' a'kpu:xkawálh.*

tu'j-**nun**-lh=i jú:ki' chu:wáj chi: chichí' a'kpu:-xkawá-lh
 run-**AP**-PFV=JUNCT deer now PTCL dog crown-run.after-PFV
 'The deer ran now, and the dog ran after it.' [FAS: Frog story 29]

(728) *Kwa i'lhkiti'tnín. Lha: xlakapalá a'kxníka' xtapalí: i'xmákni'.*

Ø-i'k-wa-Ø i'x-lhkiti't-**nin**-Ø lha: i'x-lakapalá-Ø
 PRES-1SG.SUB-say-IMPF PST-be.lazy-**AP**-IMPF NEG PST-hurry-IMPF

a'kxníka' i'x-tapalí:-Ø i'x-mákni'
 when PST-change-IMPF 3POSS-body
 'I say that he was lazy and would not hurry when his body would change.'
 [RLP: Chameleon 3]

The examples in (726)-(728) also demonstrate that the suffix *-nVn* is conditioned by the quality of the last vowel of the verb stem as in transitive constructions. With the verb *tapala:xlá* 'X gets expensive' in (726), the suffix *-nan* combines with the present imperfective form of the verb, which has an atelic habitual reading. The bound root **tu'j-* 'run' requires the suffix *-nun* to form a verb stem and depicts a running event that has no definite boundaries, while the perfective is used to narrate the sequence of the events as they occurred. In (728), *lhkiti't* 'be lazy' requires the suffix *-nin* to form a verb stem and has an atelic reading by expressing a state that is maintained through time. For some of these intransitive verbs with the *-nVn* suffix, it may be the case as Watters (2017a: 168) points out, that the verbs cannot be analyzed synchronically as bimorphemic stems (i.e. *tu'jnún*), since they are rather fossilized forms although the suffix is historically related to the antipassive marker.

In sum, the antipassive *-nVn* suffix in ZT generally reduces the valency of transitive verbs by one and either expresses an action affecting an implied (indefinite or generic) object or attributes an activity-like meaning to the verb. The cognate suffix in other Totonacan languages has been labeled an indefinite object marker for Misantra Totonac (McQuown 1990 & MacKay 1997, 1999), Papantla Totonac (Levy 2002b), and Huehuetla Tepehua (Kung 2007a) although in these languages, verbs with *-nVn* can take an overt indefinite or generic object and the verb shows agreement with the indefinite object. The cognate suffix is referred to as an antipassive in Tlachichilco Tepehua (Watters 1988), Filomeno Mata (McFarland 2009), and Upper Necaxa (Beck 2014), where in these languages the suffix is described as functioning as a detransitivizer. In the Northern

Totonac languages, the suffix has been called a detransitivizer in Apapantilla (Reid 1991), and as an object suppressive (detransitivizer and decausative), indefinite object marker, and antipassive in Upper Necaxa (Beck 2004, 2007a, 2011a, 2014). The term antipassive was therefore chosen here to describe this marker in ZT since it seems to resemble most closely the functions described in Watters (1988), McFarland (2009), and Beck (2014).

5.4.3 *Reciprocal*

The reciprocal voice is encoded with the prefix *la:-* and indicates that two or more event participants are acting on one another. Reciprocal constructions express the fact that the action corresponds to, or is undertaken by, both the AGENT and UNDERGOER of the clause simultaneously, cf. (729)-(730).

(729) *Tamu'súlh.*
 ta–mu'sú–lh
 3PL.SUB–kiss–PFV
 ‘They kissed her/him/it/them.’

(730) *Tala:mu'súlh.*
 ta–**la:**–mu'sú–lh
 3PL.SUB–RCP–kiss–PFV
 ‘They kissed each other.’

Constructions expressing subject-object reciprocity are necessarily inflected for a plural subject and are incompatible with object markers. The four forms of the reciprocal are exemplified in (731)-(734).

(731) *I'kla:laqtziuj.*
 i'k–**la:**–laqtzín–uj–Ø
 1SG.SUB–RCP–see–1PL.SUB–PFV
 ‘We_{EXC} saw each other.’

(732) *La:laqtziuj.*
la:–laqtzín–uj–Ø
 RCP–see–1PL.SUB–PFV
 ‘We_{INC} saw each other.’

(733) *La:laqtzintít.*
la:–laqtzín–tít–Ø
RCP–see–2PL.SUB–PFV
 ‘You all saw each other.’

(734) *Tala:laqtzilh.*
ta–la:–laqtzín–lh
3PL.SUB–RCP–see–PFV
 ‘They saw each other.’

Reciprocal constructions may also indicate that the reciprocity is between two or more non-sentient participants, or rather inanimate objects, as shown in (735).

(735) *La:ma:pi'tzilh pu:qó'tnu'.*
la:–ma:–pi'tzí–lh **pu:–qó't–nu'**
RCP–CS–be.halved–PFV **CNTR–drink–PL**
 ‘She separated the cups.’ [FAS: Cut and Break]

These forms with the reciprocal marker *la:-* are generally transparent, contributing to the clause that the event participants are acting on one another.

The reciprocal prefix is also used inflectionally in transitive paradigms in forms where a second-person subject acts on a first-person object and one or both participants are plural, as in (736).

(736) *Kila:tuksá:uj.*
kin–la:–tuks–a:–uj
1OBJ–RCP–hit–IMPF–1PL.SUB
 (i) ‘You_{PL} hit me’
 (ii) ‘You_{SG} hit us’
 (iii) ‘You_{PL} hit us’
 2PL > 1SG, 2SG > 1PL, 2PL > 1PL

The reciprocal *la:-* in (736) does not indicate reciprocity between the speech act participants. The expression of this particular grammatical relation uses an idiosyncratic set of morphemes *kin-* (1OBJ) *la:-* (RCP) *-uj* (1PL.SUB) that results in a multiply ambiguous form when subject and object are speech-act participants and one or both are plural, as described in §5.1.2.

To summarize this section on voice, the grammatical categories described here as voice alter the number of event participants involved in the action or event expressed by the verb while also showing a different pattern of agreement marking than the pattern described for verbs that are in the active voice in §5.1. Verbs forms marked with the indefinite subject suffix convey the idea that the subject of the predicate is indefinite or generic, or it takes an agentless reading. Indefinite subject forms are also used to express reflexivity, which is typical for Totonacan languages. Verbs in indefinite object or antipassive forms signify that the subject is acting on an implied generic or indefinite object, or contributes an activity-like reading to the event expressed by the verb. These two systems of indefinite marking work together in narratives and discourse to foreground and background event participants, track referents, and maintain topic chains. The reciprocal in its most compositional uses expresses the idea that the event participants are simultaneously acting on one another. In all cases, voice markers alter the number of event participants by reducing the syntactic valency of the verb, but they do not change the semantic roles of event participants. The verb template in Figure 8 shows that these morphemes appear on the verb stem between inflectional and derivational categories, which is further supported by the forms and functions voice constructs play in ZT.

In summary, Chapter 5 presents the inflectional properties of the verb in ZT, including person/number agreement in intransitive and transitive verbs, aspect, tense, and mood. The chapter further includes the inflectional patterns of a subclass of verbs described as stative verbs, which differ particularly in aspectual inflections from dynamic verbs. While these grammatical properties of verbs have been described in the default active voice, this chapter ends with a description of three other voice constructs in ZT: indefinite subject, antipassive, and reciprocal, all of which show some variation in patterns of agreement. The next chapter describes verb derivational morphology in ZT. Verb derivation in ZT includes a number of affixes that increase or decrease the valency of the verb, including causative, decausative and several applicatives, as well as some morphemes that derive new verbs without altering verb valency. A fairly large number of adverbial derivational morphemes further form new verb stems and express a range of spatial, temporal, aspectual and modal senses.

6 Verb Derivation

This chapter addresses categories that derive new verbs or more specific verbs by increasing or decreasing the number of event participants involved in the argument structure of the base verb or by modifying the verb stem. These affixes have been roughly categorized as either 1) valency-changing affixes or 2) adverbial affixes that do not have valency-changing effects, but rather modify the verb stem by adding adverbial or aspectual-like senses. Unlike inflection, which applies across all applicable stems (see Chapter 5), derivational morphology is more selective and appears more regular in form, showing much less allomorphy and grammatical irregularities. Verbs derived with these affixes take the usual person and number agreement as described in §5.1 and TAM morphology as shown in §5.2. Derivational affixes further combine and recombine with derived and underived verbs to form multi-valent stems or more morphologically and semantically complex predicates.

This chapter begins with those affixes which have valency-changing effects on the verb base (see §6.1). Derivational affixes that increase the syntactic valency of the verb stem include two causatives, and a variety of applicatives, such as the dative, instrumental, comitative, and allative. Causatives and applicatives in ZT introduce participants that are associated with particular semantic roles, although they can also often form some lexicalized or idiosyncratic stems. One affix, the “decausative”, reduces the valency of the verb stem and may be etymologically related to the inchoative prefix found on stative stems (cf. §5.3). One derivational prefix that seems to be specific to Totonacan languages is referred to as the “alienative” following Levy (2002a), who describes the prefix as etymologically related to the causative. The alienative in ZT expresses the idea that the event denoted by the verb occurs in somebody else’s domain adding an implied semantic participant. Although this prefix does not generally increase syntactic valency, it is included in this section since, in some lexicalized stems, the alienative may add an argument to the meaning of the underived verb, as seen in §6.1.4. This section further includes the subclass of nouns known as body-part terms. Body-part terms that are incorporated with verb roots and stems express meanings related to anatomy and

partonomy as described in §3.3.3. Incorporated body-part terms (BPTs) are used in stem formation to create more specific verbs which denote a semantic entity expressing LOCATION or a participant denoting a semantic PATIENT or INSTRUMENT. At times, body-part terms that are incorporated with verbs are productive and transparent but most often form lexicalized or idiosyncratic stems. Most body-part terms do not change the syntactic valency of the verb; however, some body-part terms plus verb stem combinations have valency-increasing properties.

This chapter further discusses a number of affixes that form more specific verbs by modifying the stem in adverbial or aspectual-like ways but which do not change the number of participants involved (see §6.2). In Totonacan studies, these affixes have been referred to as “adverbial derivational” affixes in Watters (1988), “aspectual derivational” morphemes in Kung (2007a) and McFarland (2009), and as “quasi-inflectional affixes” in Beck (2004).³⁴ Adverbial affixes modify the verb by adding spatial, temporal, aspectual, or modal senses to the meaning of the stem. Adverbial derivational morphology includes categories such as the intensifier, path, roundtrip, ambulative, repetitive, totalitative, distal, proximal, and desiderative. These affixes may be added to verbs in fairly regular and compositional ways; however, these are not obligatory or grammatical aspectual or temporal categories in the same way inflectional morphology is obligatory. Section 6.1 describes those verbal affixes that can potentially change the valency of the verb stem while section 6.2 discusses those verbal morphemes that form new verb stems by functioning like adverbial or aspectual modifiers. A full list of the derivational affixes covered in this chapter as well as some of their functions can be found in Appendix C.

6.1 Valency-changing Affixes

This section describes those affixes in ZT which change the event structure of the verbal predicate by adding or removing event participants. These affixes combine with verb roots

³⁴ The term “quasi-inflectional verbal morphology” was coined by Mel'čuk (2006: 120) in reference to verbal morphemes that do not create new verb forms as derivational affixes do, but do not express obligatory grammatical categories either as inflection does. According to Mel'čuk (2006), quasi-inflectional morphemes can be freely added to any verb form depending on the context without creating a new verb stem; these affixes are described as being regular and compositional in terms of meaning and form, similar to inflection, while derivational morphology can form some rather idiosyncratic or lexicalized expressions.

or stems and with each other to form multi-valent stems or more complex predicates that alter the relationship between event participants. Valency-changing affixes in ZT, for the most part, are morphologically regular and fairly easy to recognize since they show little allomorphy as compared to inflectional morphology. These affixes add an argument to the meaning of the base verb that is associated with particular semantic role(s) in their most transparent and compositional uses, although they often form lexicalized constructions and are therefore not reducible to the meanings of its parts.

Affixes that alter the event structure of the underived verb by adding a syntactic subject include two causatives: the causative (CS) circumfix *ma:- -ni:* and following Beck (2011) the “stimulus” (STM) prefix *maq-*. Both of these add an event participant that licenses the causer or stimulus of the event expressed by the base verb. Additionally, a number of applicatives add event participants as the syntactic object. The dative (DAT) *-ni(')*, instrumental (INST) *li:-*, comitative (CMT) *ta:'-*, and allative (ALL) *la'q-* all add objects with particular semantic roles. Finally, the decausative (DCS) *ta-*, decreases verb valency while the alienative (ALN) *maq-* and body-part terms (BPT) are generally valency neutral with some exception. Since these stem-forming affixes affect the roles that participants occupy in the event structure, they appear closer to the verb root than affixes that signal inflectional categories, as is typologically common in languages around the world. Figure 9 shows the relative order of the valency-changing affixes, although even this order is subject to variability, in particular with the collection of more data and further documentation. The gloss “BPT” in the template stands for body-part terms, which frequently appear incorporated with a verb root or stem, especially stative posture verb stems, as described in §3.3.3.1 and §5.3.2. The brackets < > in Figure 9 signify that the affix may appear in various places in the verb stem; the shaded columns represent those affixes that are derivational.

Tense/Mood	Person	Mood	Person		Reciprocal	Valency-changing affixes			(BPT +) Root	Valency-changing affixes	Voice	Aspect	Inflection	Voice	Person	Aspect
PST FUT OPT	1SUB 1OBJ	POT	PL.OBJ	3PL.SUB	RCP	<CS> <INST>	<INST> CMT <BPT> ALL	<CS> DCS ALN		CS DAT	AP <IDF>	IMPF PROG PF	ST.PL	<IDF>	1PL.SUB 2SG.SUB 2PL.SUB 2OBJ 1PL.SUB	PFV

Figure 9: Idealized order of valency-changing affixes as integrated with the inflectional affixes detailed in Chapter 5

Figure 9 proposes a potential model for an order of all verbal affixes. The figure shows that inflectional affixes appear on the outer edges on either side of the stem, although the model ignores that many inflectional categories are unmarked or marked by a combination of affixes, portmanteau morphemes, or by suppletion. Derivational affixes, in contrast, appear closer to the root on both sides of the verb and some of these affixes are found in various positions in comparison to other derivational affixes. The examples in (737) and (738) show an order of various inflectional and derivational affixes as reflected in Figure 9.

(737) *Tala:le:'qxoxó:lh.*

ta-la:-li:-a'q-xoxó:-lh
3PL.SUB-RCP-INST-head-pay(?)-PFV
 '... they tricked each other.' [SLO: Cuentos 63]

(738) *I'xmín ka:chi'páx ka:la'qta-laka-tzunajé:.*

i'x-min ka:-chi'pá i'x-ka:-**la'q-ta-laka**-tzunajé:
 PST-come PL.OBJ-grab PST-PL.OBJ-**ALL-DCS-face**-close
 '(The witch) used to come grab them as she got close to them.'
 [MCC: Witch story 3]

Although the verb form in (737) is idiosyncratic, it shows that inflectional affixes appear furthest from the root than derivational ones, with the reciprocal *la:-* (RCP) somewhere in between appearing after participant marking and before valency-changing derivation. The example in (738) shows that after inflectional prefixes, the allative, which introduces an object expressing a GOAL, appears further from the stem than other derivational morphemes, such as the decausative and the body-part term. Since the allative does not add

a participant that is directly affected by the meaning denoted by the verb but rather modifies the spatial profile of the event, this may be the reason the prefix appears further from the root although this requires further investigation. Body-part terms usually incorporate directly with verbal roots although there is variation in this order within the stem as well [cf. *tampu:sma:xtúka'* (*tampu:s-* ‘belly-button’ *ma:-* (CS) *-xtu* ‘out’ *-ka'* (IDF), ‘Someone took it out (of the belly button)’ Lit. ‘Someone belly-button-removed it’]. The examples in this subsection further illustrate the proposed order of affixes in Figure 9.

The forms and functions of valency-changing affixes in ZT are further described below. The following sections are organized as follows. Section 6.1.1 discusses the two causatives. Section 6.1.2 presents a variety of applicatives, such as the dative in §6.1.2.1, instrumental in §6.1.2.2, comitative in §6.1.2.3, and allative in §6.1.2.4. The decausative prefix is described in §6.1.3. The “alienative”, as is known in Totonacan linguistics, is described in §6.1.4. Body-part terms incorporated with verbs are further described in §6.1.5 and were presented in the context of stative and dynamic verbs in §3.3.3.1.

6.1.1 Causatives

A causative is a derivational affix that has the effect of adding a syntactic subject expressing a semantic participant that causes the event expressed by the non-causative stem (Dixon & Aikhenvald 1997: 81, Dixon 2000: 30-1). Zihuateutla Totonac has two causative morphemes. The circumfix *ma:- -ni:* (CS) is found with dynamic stems. The prefixal portion *ma:-* forms dynamic stems from stative bases, as also described in §6.1.1.1. The prefix *maqa-* (STM) described as “stimulus”, following Beck (2011), is similarly found with some verbs denoting mental states in ZT, which suggests that the affix adds a syntactic subject that functions as the participant which stimulates or motivates the process or event denoted by the verb stem (see §6.1.1.2). Both causative and stimulus morphemes involve the specification of a central participant that causes or initiates the event, although stimulus constructions (in its most compositional uses) seem to involve at least one argument that experiences the event denoted by the verb.

6.1.1.1 Causative Circumfix

The causative circumfix *ma:- -ni:* (CS) adds a syntactic subject expressing a CAUSER of the

event. The causative circumfix is widely distributed and is found with dynamic intransitive and transitive stems. The prefixal portion *ma:-* of the causative is found with stative verbs where it derives a dynamic stem (see §5.3). With dynamic intransitive verbs, the subject of the underived verb becomes the object of the causative stem, or the CAUSEE. The examples in (739)-(740) demonstrate that the circumfix *ma:- -ni:* added to the intransitive stem increases the valency of the verb by one.

(739) *Qalhto:'qá'lh.*
qalhto:'qá'-lh
 sing-PFV
 'S/he sang.'

(740) *Maria kima:qalhto:'qa'ni:.*
 Maria kin-**ma:**-*qalhto:'qá'-ni:-Ø*
 Maria 1OBJ-CS-sing-CS-IMPF
 'Maria makes me sing.'

The example in (739) exemplifies how the intransitive verb *qalhto:'qá'* 'X sings/prays' becomes transitive by the addition of the causative circumfix in (740), which derives the bivalent stem *ma:qalhto:'qa'ni:* 'A causes X to sing/pray'. The causative derivative in (740) displays agreement with the object, marked on the verb with the prefix *kin-* (1OBJ).

The circumfix *ma:- -ni:* is also found with transitive stems, as in (741)-(742), which shows that the causative morpheme adds a syntactic subject expressing a CAUSER and what was the subject of the non-causative stem functions as the object.

(741) *Che'qé:.*
che'qé:-Ø
 clean-IMPF
 'S/he cleans it.'

(742) *Kinka:ma:che'qe:ni: talha'qá:n María.*
 kin-ka:-**ma:**-*che'qé:-ni:-Ø* talha'qá:n María
 1OBJ-PL.OBJ-CS-clean-CS-PFV clothes María
 'Maria made us clean clothes.'

The addition of the circumfix to the transitive bivalent root *che'qé:* 'X cleans Y' in (741) augments the valency of the verb by one in (742) by adding a CAUSER as the subject of the clause. The causative derivative forms a trivalent stem *ma:che'qe:ni:* 'A causes X to clean

Y,' which takes two objects, one that is marked on the verb with *kin-* (1OBJ) and *ka:-* (PL.OBJ) for the first-person plural object, and the other which is expressed with the noun *talha'qá:n* 'clothes'. The full form of the circumfix is *ma:- -ni:*, which is the form with the most phonetic content, appears with vowel-final stems, as in (740) and (742) above. However, the suffixal portion of the causative circumfix exhibits the most allomorphy of all the derivational morphemes, indicating that most of these causative forms are lexical and learned as a unit.

Table 47 illustrates some vowel-final stems with the full form of the causative circumfix, this being the form with the most phonetic content.

Table 47: Causative (CS) forms with the circumfix *ma:- -ni:*

Non-causative stems		Causative stem	
<i>katzi:</i>	'X knows Y'	<i>ma:katzi:ní:</i>	'A lets X know Y'
<i>che'qe:</i>	'X cleans'	<i>ma:che'qe:ní:</i>	'A makes X clean'
<i>qalhto:'qá'</i>	'X sings'	<i>ma:qalhto:'qa'ní:</i>	'A makes X sing'
<i>sa:kwá</i>	'X borrows Y'	<i>ma:sa:kwaní:</i>	'A lends X the Y'

The forms in Table 47 are the few causative stems found with the full form of the causative circumfix *ma:- -ni:*. Of these four forms, two of the causative stems *ma:katzi:ní:* 'A lets X know Y' and *ma:sa:kwaní:* 'A lends X the Y' are somewhat idiosyncratic — that is, their causative meanings are not entirely predictable from the meaning of the non-causative stem.

With most consonant-final stems, the causative circumfix is realized as *ma:- -V:*, as in Table 48.

Table 48: Causative forms with the circumfix (CS) *ma:- -V*:

Non-causative stems		Causative stems	
<i>tzey</i>	‘good’	<i>ma:tzeyí:</i>	‘A heals, cures X’
<i>ska:k-</i>	‘X dries’	<i>ma:ska:kí:</i>	‘A dries X out’
<i>*mix</i>	‘X cools off’	<i>ma:mixí:</i>	‘A cools X off’
<i>sta'j-</i>	‘X gets wet’	<i>ma:sta'jí:</i>	‘A gets X wet’
<i>pax-</i>	‘X bathes’	<i>ma:paxí:</i>	‘A bathes X’
<i>pa:sta'k-</i>	‘X remembers Y’	<i>ma:pa:sta'kí:</i>	‘A makes X remember Y’
<i>laqawan</i>	‘X wakes up’	<i>ma:laqawaní:</i>	‘A wakes X up’
<i>lakaa'n</i>	‘X faces a direction’	<i>ma:lakaa'ní:</i>	‘A makes X face a direction’
<i>lakwán</i>	‘X disperses’	<i>ma:lakwaní:</i>	‘A makes X disperse’
<i>laqtzín</i>	‘X sees Y’	<i>ma:laqtzíní:</i>	‘A makes X see Y’
<i>le:'n</i>	‘X takes Y’	<i>ma:le:'ní:</i>	‘A makes X take Y’
<i>li:mín</i>	‘X brings Y’	<i>ma:li:miní:</i>	‘A makes X bring Y’
<i>qot-</i>	‘X drinks’	<i>ma:qotú:</i>	‘A makes X drink’
<i>yuj-</i>	‘X comes down’	<i>ma:yujú:</i>	‘A makes X come down’
<i>sput-</i>	‘X finishes’	<i>ma:sputú:</i>	‘A finishes X’

Table 48 demonstrates that with consonant-final stems, the initial nasal of the suffix is omitted and the suffix appears to be in (partial) vowel harmony with the last vowel of the stem. On the one hand, when the stem-final vowel is a non-back vowel, such as /i, e, a/, the causative suffix seems to be /i:/, as in (743)-(745).

(743) *Ma:mixí:*.

ma:–mix–**i:**

CS–be.cool–CS

‘S/he cools it off.’

(744) *Ma:tzeyí:lh.*

ma:–tzey–**i:**–lh

CS–good–CS–PFV

‘S/he cured it.’

(745) *Ma:jaxi:ka'. Wankán ma:jaxi:ka'.*

ma:-jax-i:-ka' wan-kan **ma:-jax-i:-ka'**
 CS-rest-CS-IDF:PFV say-IDF:IMPF CS-rest-CS-IDF:PFV
 'He was put to rest. It is said that he was put to rest.' [SLO: Cuentos 75]

The examples in (743)-(745) further show that these forms are also relatively idiosyncratic, forming verb stems that are not entirely semantically compositional. The example in (745) is more semantically analyzable; the indefinite form of the causative stem has the effect of foregrounding the CAUSEE (i.e. the one being put to rest) and backgrounding the CAUSER, who is more peripheral to this event in the context of the story.

On the other hand, when the stem ends in a consonant and a final back vowel, such as /u, o/, the suffixal portion of the causative seems to be /u:/, as in (746)-(747).

(746) *Chichi' ma:yujú:lh i'xchik u:'xúm.*

chichi' **ma:-yuj-u:-lh** i'x-chik u:'xúm
 dog CS-come.down-CS-PFV 3POSS-house bumble.bee
 'The dog knocked down the bumble bee's house.' [FAS: Frog story 20]

(747) *Xtala:ta:'qóta. Xtala:ma:qotú:n.*

i'x-ta-la:-ta:'-qot-a i'x-ta-la:-**ma:-qot-u:-Ø**≡n
 PST-3PL.SUB-RCP-CMT-drink-IMPF PST-3PL.SUB-RCP-CS-drink-CS-IMPF≡JUNCT
 'They used to drink together; they used to make each other drink.'
 [SLO: Cuentos 60-61]

While the causative stems in (746)-(747) are semantically compositional and fairly predictable, the form of the causative stem can be phonologically conditioned with these few verbs; the allomorphy, however, may be better described as lexically-conditioned since not many stems show this type of vowel harmony.

The allomorphy for other stems is not phonologically conditioned and may only be analyzed lexically, as in Table 49.

Table 49: Lexically-conditioned causatives (CS) with the circumfix *ma:- -V*

Non-causative stems		Causative stems	
<i>sqewi'wi'</i>	‘cold’	<i>ma:sqewi'wí:'</i>	‘A makes X cold’
<i>ta'qa:wí</i>	‘X gets hurt’	<i>ma:ta'qawí:</i>	‘A wounds X’
<i>stanyanká</i>	‘X is sharp’	<i>ma:stayankí:</i>	‘A makes X sharp’
<i>pupú</i>	‘X boils’	<i>ma:pupú:</i>	‘A makes X boil’
<i>lhtatá</i>	‘X sleeps’	<i>ma:lhtatí:</i>	‘A makes X sleep’
<i>wa</i>	‘X eats Y’	<i>ma:wí:</i>	‘A makes X eat Y’

Table 49 shows that the causative circumfix with certain verb stems is lexically conditioned, that is, the form is not predictable based on the phonological environment. The examples in (748)-(750) demonstrate that the final vowel of the non-causative verbal base is deleted or assimilates with the suffixal portion of the circumfix which is realized as a long vowel that seems to match the backness of the last vowel of the base, represented as *-V:*. The suffixal portion of the circumfix has been bolded in the orthographic line in these examples to highlight the process described.

(748) *Ma:stayankí: i'xó'qsni'*.

ma:–stayanká–**i:**–Ø i'x–ó'qsni'
 CS–sharp–CS–IMPF 3POSS–point
 ‘He sharpens the tip (of the machete).’

(749) *Ma:lhtatí:lh.*

ma:–lhtatá–**i:**–lh
 CS–sleep–CS–PFV
 ‘He put her to sleep.’

(750) *Ma:pupú:lh.*

ma:–pupú–**u:**–lh
 CS–boil–CS–PFV
 ‘She boiled it.’

The allomorphy in (748)-(750) further indicates that these forms are lexical even though they are semantically compositional. In (750), the last vowel of the base can be described as lengthened by the presence of the causative, which is relatively unpredictable as other vowel-final stems take the full form of the circumfix *ma:- -ni:*.

While the causative circumfix *ma:- (-ni:)* is productively used with verbs to add a participant that acts as a syntactic subject, two examples exemplify that the circumfix combines with other lexical classes to form a verbal predicate, as in (751)-(752).

(751) *Ma:sqewi'wi':lh.*
ma:-sqewi'wi'-i:-lh
 CS-cold-CS-PFV
 'S/he froze it.'

(752) *Ma:tzeyi:lh.*
ma:-tzey-i:-lh
 CS-well-CS-PFV
 'S/he, it cures it.'

The adjective *sqewi'wi'* 'cold' in (751) is made into a causative verb with the circumfix, forming the transitive stem *ma:sqewi'wi':* 'A makes X cold/A freezes X' (c.f. *sqewi'wi' li:wát* 'cold food' and *sqewi'wi' wan* '(it) becomes cold'). In (752), *tzey* 'good, well' is an adverb, which is made into a causative verb with the circumfix, deriving a relatively idiosyncratic transitive stem *ma:tzeyi:* 'A makes X well/A cures X' (c.f. *tzey i'klawí:* 'I am well').

The causative form of stative verbs is derived with the addition of only the prefixal (CS) portion *ma:-* of the circumfix, which increases the verb valency by one and derives a dynamic stem from the stative base, as in (753)-(754). Derived stative verbs with the causative prefix are also discussed in §5.3.

(753) *We:n ma:tankapú:li sqá'ta' jú:ki'.*
 we:n **ma:-**tankapú:-lh≡i sqá'ta' jú:ki'
 IDPH CS-be.at.bottom.of.slope-PFV≡JUNCT child deer
 'The deer threw the child down the hill.' [FAS: Frog story 31]

(754) *Lakxu:núnka' ma:wa'ká'ka' kini:t.*
 lak-xu:-nun-ka' **ma:-**wa'ká'-ka' kini:t
 INTNS-skin-AP-IDF:PFV CS-be.high.up-IDF:PFV meat
 '(The meat) was skinned and hung.' [RVA: Cuentos 47]

In (753), the prefix *ma:-* on the locative stative base *tankapú:* 'X is at the bottom of a hill' derives a dynamic transitive verb, *ma:tankapú:* 'A causes X to be at the bottom of a hill'. The verb is inflected for the perfective aspect with the suffix *-lh*, like regular dynamic

verbs. The causative prefix with the stative verb *wa'ká'* 'X is hanging/high up' derives the transitive stem *ma:wa'ká'* 'A causes X to be hanging' in (754); the indefinite form of the verb similarly has the effect of backgrounding the CAUSER of the event and foregrounding the CAUSEE.

The causative is also found affixed to Spanish loanwords, as in (755)-(756).

(755) *Ma:firmajli:ní:ka' laqatín kapsnát.*

ma:-firmaj-li:-**ni:**-ka' laqa-tin kapsnát
 CS-sign-VBL-CS-IDF:PFV NUM.CLF-one paper
 'They were made to sign a document.' [SLO: Cuentos 64]

(756) *Pus pú:li' ma:qotú:ka'. Li:ma:tontojli:ka'.*

pus pú:li' ma:-qot-u:-ka' li:-**ma:**-tontoj-li:-ka'
 pues first CS-drink-CS-IDF:PFV INST-CS-dumb-VBL-IDF:PFV
 'Well, first, they were made to drink and made to feel dumb.' [SLO: Cuentos 68]

The Spanish verb *firmar* 'X signs Y' in (755) is nativized using the suffix *-li:* and takes the causative circumfix to create the verb *ma:firmajli:ní:* 'A causes X to sign Y'. The Spanish adjective *tonto* 'dumb', nativized with *-li:*, is treated as a stative stem, since stative verbs take only the prefixal portion of the causative *ma:-* (CS) in (756) (see §5.3); the verb form also takes the instrumental *li:-* forming a transitive trivalent stem *li:ma:tontojli:* 'A causes X to feel dumb because of Y'. Both examples in (755)-(756) exhibit indefinite verb forms which function to background the CAUSER and foreground the CAUSEE in the structure of the event.

The prefix *ma:-* is found to be cognate throughout the Totonacan family. The full form of the circumfix *ma:- -ni:* is described as occurring with transitive bases and as *ma:- -V:* with intransitive bases in Tlachichilco Tepehua (Watters 1988: 187–199), Misantla Totonac (MacKay 1999: 268–271), Filomeno Mata Totonac (McFarland 2009: 152–154), Coatepec Totonac (McQuown 1990: 179), and Cerro del Carbón Totonac (Levy 2002b). In the Northern languages, the *n*-less *ma:- -V:* form is lexically conditioned and proposed to be governed by stem class or phonological environment, as described in Upper Necaxa Totonac (Beck 2014: 11, to appear). The suffixal portion of the circumfix *-ni:* has been analyzed as a dative or benefactive applicative for Tlachichilco Tepehua (Watters 1988), Filomeno Mata Totonac (McFarland 2009), Coatepec Totonac (McQuown 1990), and Cerro del Carbón Totonac (Levy 2002b). In ZT, few stems take the full form of the

causative circumfix *ma:- -ni*: while other causative stems show phonologically motivated allomorphic patterns and other stems are just lexically conditioned. The causative in ZT seems to add an event participant in the form of a syntactic subject, although the causative stem may also produce some idiosyncratic meanings. These data may suggest that causative stems are lexical in form and function and may be better analyzed contextually in order to more accurately describe causative stems.

6.1.1.2 Stimulus

The other causative-like morpheme is the stimulus (STM) prefix *maq-*, which adds a syntactic subject expressing a semantic participant that stimulates or motivates the process or event denoted by the non-causative stem. The stimulus prefix *maq-* differs from the causative circumfix *ma:- -ni*: in that *maq-* seems to primarily combine with verbs that express cognitive, mental, or emotional processes, as in (757)-(758).

(757) *Xiwá:n li:tzi:nli'*.

xiwá:n li:tzi:n-li'
 Juan laugh-PFV
 'Juan laughs.'

(758) *Xiwá:n kinka:maqali:tzi:ni'*.

xiwá:n kin-ka:-**maq**a-li:tzi:n-ni'-Ø
 Juan 1OBJ-PL.OBJ-STM-laugh-2OBJ-PFV
 'Juan made us laugh.'

The intransitive stem meaning 'X laughs' in (757), *li:tzi:n*, becomes transitive in (758) with the addition of the stimulus prefix, *maqali:tzi:n* meaning 'A makes X laugh'. The new semantic participant, the STIMULUS, is expressed as the subject in (758), and what was the subject of the underived stem, now the CAUSEE, is realized as the direct object, marked on the verb with object morphology.

In the database, the prefix *maq-* is only found with intransitive stems, many of which express mental processes or emotional states. However, it is also possible for the prefix to occur with other types of stems such as *la* 'do' and *tzanqá*: 'lose'. Even though there are not many verbs that were documented with the stimulus prefix *maq-*, the attested forms are listed in Table 50.

Table 50: Causative forms with the stimulus (STM) prefix *maqa-*

Non-causative stems		Causative stems	
<i>pa:xu:wá</i>	‘X is happy’	<i>maqapa:xu:wá</i>	‘A makes X happy’
<i>li:pu:wán</i>	‘X is sad’	<i>maqali:pu:wán</i>	‘A makes X sad’
<i>tleqwá'n</i>	‘X is tired’	<i>maqatleqwá'n</i>	‘A makes X tired’
<i>siyanqán</i>	‘X is afraid’	<i>maqasiyanqán</i>	‘A makes X afraid’
<i>li:tzí:n</i>	‘X laughs’	<i>maqali:tzí:n</i>	‘A makes X laugh’
<i>tzanqá:</i>	‘X is lost’	<i>maqatzanqá:</i>	‘A loses X’
<i>la</i>	‘X does’	<i>maqalá</i>	‘A harvests X’

Table 50 indicates that with verbs expressing emotional states, the semantic role of the added subject is that of STIMULUS rather than an agentive CAUSER. With other stems, the prefix *maqa-* adds a syntactic subject expressing an EXPERIENCER, as in (759).

(759) *Kit i'ki:lálh e:' i'ktaspi'tli' i'kmaqatzanqá:lh kintumí:n.*

kit i'k–ki:–la–lh e:' i'k–ta–spi't–li'
 PRN.1SG 1SG.SUB–RT–do–PFV and 1SG.SUB–DCS–turn–PFV

i'k–**maqa**–tzanqá:–lh kin–tumí:n
 1SG.SUB–STM–lost–PFV 1POSS–money
 ‘I left and returned and lost my money.’

The intransitive stem *tzanqá:* meaning ‘X is lost’ becomes transitive with the addition of the stimulus prefix, *maqatzanqá:* meaning ‘A loses X’, forming a relatively idiosyncratic stem, where the added semantic participant is the EXPERIENCER of the event denoted by the verb stem.

The stimulus prefix is found in other verb derivations that have idiomatic or lexicalized senses, as in (760).

(760) *U:'tunún tamaqalaní:'t.*

u:'tunún ta–**maqa**–la–ni:'t
 they 3PL.SUB–STM–do–PF
 ‘They have harvested it.’

In (760), *maqa-* combines with the verb *la* ‘X does’ deriving a transitive stem *maqalá* ‘A harvests X’. The causative stem is derived from a light verb, which idiomatically refers to

growing crops.

Finally, the prefix *maq-* is also found in fossilized forms that take a syntactic subject expressing a CAUSER, as in (761).

(761) *Maqaki:'*
maq–**ki:'**
STM–lift
'S/he lifts it.'

In (761), the verb stem *maqaki:'* 'A lifts X' is derived from the bound root *-ki:'* 'lift' and the prefix *maq-* (STM). For some verb stems, speakers have derived the causative form in different ways. For example, two forms for *maqali:tzi:n* and *ma:li:tzi:ni:* 'A makes X laugh' and *ma:ki:'* and *maqaki:'* 'A lifts X up' are found in the database, suggesting that these stems are better analyzed contextually in order to decipher its interpretation. This choice in form may suggest that the causative (CS) prefix *ma:-*, the stimulus (STM) prefix *maq-* [and possibly the alienative (ALN) prefix *maq-* (see §6.1.4)] may be historically related and have grammaticalized to form lexical items with certain types of participants. Mithun (2002a) notes a common grammaticalization pattern where causatives have evolved from a lexical item meaning "hand". The noun *maqán/makán* 'hand' in ZT resembles the stimulus and causative prefixes in form and while this grammaticalization process is for now a hypothesis for the development of ZT suffixes discussed here, this is an avenue for future research.

The morpheme that is cognate with the stimulus prefix in ZT is *ma'ha-* in UNT (Beck 2004: 52 & 2011a: 13). The cognate prefix in Filomeno Mata Totonac is *maq(a)-* and is referred to as a "causative" that is found with intransitive verbs expressing bodily sensations and emotions (McFarland 2009: 154). In ZT, *maq-* (STM) does not seem to show any allomorphy and seems to be highly regular in form. In terms of meaning, some stems derived with the stimulus prefix are semantically compositional and seem to involve at least one participant that is an EXPERIENCER, particularly with those verbs referring to mental or emotional processes, while other stems are completely idiosyncratic.

6.1.2 Applicatives

This section describes some of the uses of verb stems derived with affixes that function like applicatives in ZT. An applicative is a derivational affix that has the effect of adding a syntactic object to the base verb (Dixon & Aikhenvald 1997: 78, Dixon 2000: 31). The new object added by the applicative affix is referred to as the “applicative object” or “applied object” as in Peterson (2007), and within Totonacan linguistics in Beck (2014). ZT has several applicative morphemes: a dative (DAT) suffix *-ni'* (see §6.1.2.1), and three prefixal forms described as the instrumental (INST) *li:-* (see §6.1.2.2), the comitative (CMT) *ta:'-* (see §6.1.2.3), and the allative (ALL) *la'q-* (see §6.1.2.4). These affixes have the effect of manipulating the event structure denoted by the verb by adding an applicative object that is associated with specific semantic roles in their most prototypical or predictable uses but may also form new stems that range in transparency and idiomaticity.

6.1.2.1 Dative

The dative suffix *-ni'* is one of the most diverse applicatives adding an object expressing one of a number of semantic roles, including a BENEFICIARY, RECIPIENT, or PATIENT to the meaning of the base verb. In general, the dative suffix adds an indirectly affected person or entity as a core argument, similar to how Watters (1988) has described it. In Totonacan studies, however, the morpheme that is cognate across the family is generally described as a benefactive (McFarland 2009, McQuown 1990, Levy 2002b, Beck 2011a). Rice and Kabata (2012), however, show that cross-linguistically the dative introduces a wide range of semantic roles, suggesting that what is being termed the dative in ZT is in fact a dative — an applicative affix that adds a variety of participants. Some of these participants may be described as typical BENEFICIARIES, RECIPIENTS, or ADDRESSEES, but also include semantic roles such as PATIENT, MALEFICIARY, EXPERIENCER, STIMULUS, GOAL, or SOURCE. The examples that follow show the variety of semantic roles of the participant(s) that are included in the meanings of derived dative stems.

The dative *-ni'* combines with intransitive verbs to form transitive stems, as seen by comparing (762) with the dative stem in (763).

(762) *Xánka' i'skúja kinta:tá'. I'skúja kintzi:t.*

xánka'	i'x-skuj-a	kin-ta:tá'	i'x-skuj-a	kin-tzi:t
well	PST-work-IMPF	1POSS-father	PST-work-IMPF	1OBJ-mother

'My father worked well; my mother worked.' [RVA: Cuentos 37]

(763) *Xiwá:n skujni pé:dro nai'xtakúxtu.*

xiwá:n	skuj-ni-Ø	pé:dro	nak=i'x-takúxtu'
Juan	work-DAT-IMPF	Pedro	LOC=3POSS-cornfield

'Juan works for Pedro on his cornfield.'

The intransitive root *skuj-* 'A works' in (762) is made transitive by the addition of the dative suffix in (763). The dative stem *skujni()* 'A works for X' includes in its meaning the BENEFICIARY of the action, expressed by the overt nominal argument *Pedro*.

The dative applicative also applies to transitive verbs, as shown in the contrast between (764) and (765).

(764) *Lha: ti: i'xtama:wá: kini:t.*

lha:	ti:	i'x-tama:wá:-Ø	kini:t
NEG	PTCL	PST-buy-IMPF	meat

'No one bought meat.' [RVA: Cuentos 48]

(765) *Kintama:wa:ni'lh laqatín kwayúj.*

kin-tama:wá:-ni'-lh	laqa-tin	kwayúj
1OBJ-buy-DAT-PFV	NUM.CLF-one	horse

'S/he bought a horse for me.'

The examples illustrate the transitive bivalent verb *tama:wá:* 'A buys X' in (764) with its dative derivative in (765). The derived verb becomes trivalent *tama:wani()* 'A buys X for Y' and includes in its meaning the BENEFICIARY or RECIPIENT of the things being bought, marked here on the verb by *kin-* (1OBJ).

The dative stems more commonly form verbs that increase the number of event participants by adding an object expressing a number of other roles such as a SOURCE or GOAL, as seen in (766)-(767). The examples also show that the dative suffix has two forms: the final vowel of the suffix *-ni'* is laryngeal when preceding other suffixes, as in (766), and appears as a plain modal vowel verb-finally, as in (767).

Table 51: Dative verb stems with an applied object expressing BENEFICIARY and RECIPIENT

Non-dative stems		Dative stems	
<i>skuj-</i>	‘A works’	<i>sku'jni'</i>	‘A works for Y’
<i>tama:wá:</i>	‘A buys X’	<i>tama:wa:ni'</i>	‘A buys X for Y’
<i>pu'tzá</i>	‘A looks for X’	<i>pu'tzani'</i>	‘A looks for X for Y’
<i>le:'n</i>	‘A takes X’	<i>le:'ni'</i>	‘A takes X for Y’/‘A takes X to Y’
<i>maka:'n</i>	‘A sends X’	<i>maka:'ni'</i>	‘A sends X to Y’
<i>li:mín</i>	‘A bring X’	<i>li:míni'</i>	‘A brings X to Y’
<i>xoqó:</i>	‘A pays X’	<i>xoqó:ni'</i>	‘A pays X to Y’
<i>ma:spi't-</i>	‘A makes X return’	<i>ma:spi'tni'</i>	‘A returns X to Y’

Table 51 demonstrates those dative stems that take objects which express roles of BENEFICIARY and RECIPIENT. Dative stems that include a BENEFICIARY or RECIPIENT are seen with transitive verbs of transfer, like *le:'n* ‘take’, *maka:'n* ‘send’, *li:mín* ‘bring’, and *xoqó:* ‘pay’, where the suffix *-ni'* forms verbs of exchange by introducing an object expressing the RECIPIENT, as illustrated in (768)-(769).

(768) *Xiwán le:'ni'má:' xtaki'wí'lh pédro naxkawayúj.*

xiwán le:'n-ni'-ma:' i'x-taki'wí'lh pédro nak=i'x-kawayúj
 Juan take-DAT-PROG 3POSS-firewood Pedro LOC=3POSS-horse
 ‘Juan is taking wood to Pedro with his horse.’

(769) *Nakmaka:'ni'ya:'ni' tumí:n.*

na-i'k-maká:'n-ni'-ya:-ni' tumí:n
 FUT-1SG.SUB-send-DAT-IMPF-2OBJ money
 ‘I will send you the money.’

The dative *-ni'* added to the bivalent stem *le:'n* ‘X takes Y’ derives a trivalent verb meaning ‘A takes X to Y’ in (768), where the RECIPIENT is expressed with the overt noun *Pedro*. The object introduced with the dative in (768) is also potentially ambiguous with a BENEFICIARY reading ‘for Pedro’. The transitive bivalent verb *ma:ká:'n* ‘A sends X’ becomes trivalent with the dative suffix, *maka:'ni'ya:'ni'* meaning ‘A sends X to Y’, where the applied object expressing the RECIPIENT is marked on the verb with *-ni'* (2OBJ) in (769).

With verbs of speaking or communication, the dative suffix introduces the ADDRESSEE, as illustrated in Table 52. In this table, the participant that functions as the ADDRESSEE is represented by the variable “Y”.

Table 52: Dative verb stems with an applied object expressing an ADDRESSEE

Non-dative stems		Dative stems	
<i>ski'n</i>	‘A asks for X’	<i>ski'ní()</i>	‘A asks Y for X’
<i>wan</i>	‘A says X’	<i>waní()</i>	‘A says X to Y’
<i>ta'sá</i>	‘A vocalizes, sings’	<i>ta'saní()</i>	‘A calls Y’

The examples in (770)-(772) show some of the dative stems with verbs of speaking or communication.

(770) *Ma:lakí:lhni i'xma:qálhchu' ta'saní'lh.*³⁵

ma:-lakí:-lh=nak i'x-ma:qálhchu' ta'sá-**ni'**-lh
 CS-be.open-PFV=LOC 3POSS-window call.out-DAT-PFV
 ‘He opened his window and called out (to his frog).’ [FAS: Frog story 9-10]

(771) *Xiwá:n pó'qtu' kiski'ní chauj.*

xiwá:n pó'qtu' kin-ski'n-**ni**-Ø chauj
 Juan always 1OBJ-ask-DAT-IMPF tortilla
 ‘Juan always asks me for tortillas

(772) *Wa'chí' xkiwaní kina:ná', i'xna:ná'.*

wa'chí' i'x-kin-wan-**ni**-Ø kin-na:ná' i'x-na:ná'
 like.that PST-1OBJ-say-DAT-IMPF 1POSS-grandmother 3POSS-grandmother
 ‘Like that is how my grandmother, her grandmother, used to tell me.’
 [RVA: Cuentos 1]

The intransitive verb *ta'sá* ‘A calls out’ in (770) is made transitive with the dative suffix, *ta'saní* ‘A calls out to X’, which includes the ADDRESSEE — in this context, the frog for which the boy is looking. The transitive bivalent verb *ski'n* ‘A asks for X’ combines with the dative, which adds an object expressing the ADDRESSEE, forming the trivalent stem *ski'ní* ‘A asks Y for X’ in (771); the ADDRESSEE is marked on the verb stem with *kin-* (1OBJ). The dative suffix added to the transitive bivalent verb *wan* ‘A says X’ in (772) forms a

³⁵ The locative clitic =*nak* is unexpected in this example, since derived *ma:lakí:* ‘A opens X’ is a transitive verb and takes *i'xma:qálhchu'* ‘his window’ as its object.

trivalent verb, *waní* ‘A says X to Y’, where the person being addressed is marked on the verb with *kin-* (1OBJ).

Dative derivatives may also add an applicative object expressing a MALEFICIARY, as in Table 53.

Table 53: Dative verb stems with an applied object expressing MALEFICIARY

Non-dative stems		Dative stems	
<i>ka'tzán</i>	‘A feels pain’	<i>ka'taní(‘)</i>	‘A hurts Y’
<i>tu'ks-</i>	‘A hits X’	<i>tuksní(‘)</i>	‘A hits X affecting Y’
<i>sput-</i>	‘X is used up/finished’	<i>sputní(‘)</i>	‘X is lacking for Y’

The examples in (773)-(774) illustrate some of the few dative stems that include in its meaning an object expressing a MALEFICIARY.

(773) *Kinka'tzáni kina'qxá:'q.*
 kin-ka'tzan-**ni** kin-a'qxá:'q
 1OBJ-hurt-DAT 1POSS-head
 ‘My head hurts’

(774) *Tu: cha: sputni'yá:ni'.*
 tu: cha: sput-**ni'**-ya:-ni'
 what PTCL be.used.up-DAT-IMP-2OBJ
 ‘What are you missing?’ [RVA: Cuentos 85]

The applied argument introduced by the suffix *-ni(‘)* to the verb root *ka'tzán* ‘A hurts’ in (773) is a highly affected PATIENT marked on the verb with *kin-* (1OBJ), forming *ka'tzáni* ‘A hurts X’. The intransitive root *sput-* ‘X is used up/finished’ in (774) is made transitive with the dative suffix, forming the verb stem *sputní* ‘X is lacking for Y’, which includes, in this context, the person that is lacking in something, marked on the verb with *-ni'* (2OBJ).

Furthermore, verb stems with the dative suffix may add an applicative object that expresses the SOURCE that stimulates or evokes the cognitive state expressed by the verb, as in Table 54.

Table 54: Dative verb stems with an applied object expressing a STIMULUS

Non-dative stems		Dative stems	
<i>jikwán</i>	‘A is afraid’	<i>jikwani’()</i>	‘A is afraid of Y’
<i>siyanqán</i>	‘A is frightened’	<i>siyanqani’()</i>	‘A is frightened by Y’
<i>tleqwan</i>	‘A gets tired’	<i>tleqwani’()</i>	‘A gets tired of Y’

With verbs expressing cognitive or emotional states in Table 54, the suffix *-ni’()* adds to the meaning of the predicate an applied object expressing a STIMULUS or the SOURCE of the mental state denoted by the verb, as in (775).

(775) *Wani’kán pus lha:tzá’ ti: siyanqani’má:’.*

wan-ni’-kan pus lha:=tzá’ ti: siyanqán-ni’-ma:’
 say-DAT-IDF:IMPF pues NEG=now PTCL be.afraid-DAT-PROG
 ‘They say, well, no one is scared of her.’ [MCC: Llorona 6]

In (775), the intransitive stem *siyanqán* ‘A is afraid’ is made transitive with *-ni’()*, which introduces the object that evokes the emotion expressed by the underived stem.

Additionally, the dative *-ni’()* adds an applied object with the role of EXPERIENCER, as in Table 55, where the participant functioning as the EXPERIENCER in the table is denoted by the variable “Y”.

Table 55: Dative verb stems with an applied object expressing an EXPERIENCER

Non-dative stems		Dative stems	
<i>tasu’yú</i>	‘A becomes visible’	<i>tasu’yuni’()</i>	‘A is visible to Y’
<i>ma:su’yú</i>	‘A makes X visible’	<i>ma:su’yuni’()</i>	‘A shows X to Y’
<i>ma:su’yú</i>	‘A makes X visible’	<i>ma:su’yuni’()</i>	‘A teaches X to Y’
<i>tatu’kx-</i>	‘X breaks’	<i>tatu’kxni’()</i>	‘X breaks on Y’

The applied object added by the dative suffix to the inchoative and causative forms of the bound root **su’yú* ‘A is visible’ is that of an EXPERIENCER in (776)-(778), depending on the context as the context may often change the role participants play and thereby the meaning conveyed by the stem.

(776) *A'ntzá' xka:tasu'yuni mat.*
 a'ntzá' i'x-ka:-ta-su'yú-**ni**-Ø mat
 over.here PST-PL.OBJ-INCH-be.visible-DAT-IMPF QTV
 'Over there, it's said (the water) appeared to them.' [SLO: Cuentos 111]

(777) *I'ka:ma:su'yuni'lh kisqá'ta' tzu'ma:ján.*
 i'k-ka:-ma:-su'yú-**ni**'-lh kin-sqá'ta' tzu'ma:ját-n
 1SUB-PL.OBJ-CS-be.visible-DAT-PFV 1POSS-child woman-PL
 'I showed my son to the women.'

(778) *Kit nai'kma:su'yuni tutunáku' Pédro.*
 kit na-i'k-ma:-su'yú-**ni**-Ø tutunáku' Pédro
 PRN.1SG FUT-1SG.SUB-CS-be.visible-DAT-IMPF Totonac Pedro
 'I will teach Totonac to Pedro.'

The inchoative stem *tasu'yú* 'A becomes visible' is made transitive with *-ni()* to become *tasu'yuni()* 'A becomes visible to X'; the suffix introduces an object expressing an EXPERIENCER, more specifically the PERCEIVER of the event, which is marked on the verb with the plural object prefix *ka:-* in (776). The causative stem *ma:su'yú* 'A causes X to be visible/ A reveals X' becomes trivalent with the dative *-ni()*, deriving the stem *ma:su'yuni()* 'A causes X to be visible to Y' in (777), which also includes in its meaning the PERCEIVER of the event denoted by the verb. In combination with the same causative stem in (778), the dative derivative, *ma:su'yuni* 'A teaches/shows X to Y', takes an applicative object that may be interpreted as a BENEFICIARY, EXPERIENCER, or ADDRESSEE, depending on the context of the situation and whether or not Pedro benefits from the event expressed by the verb.

Furthermore, Table 56 illustrates that with other verb stems, the suffix *-ni()* may form more idiosyncratic stems that take an applied object expressing a variety of other roles, including SOURCE, DIRECTION, or GOAL depending on the context of the situation or meaning of the verb.

Table 56: Dative verb stems with an applied object expressing other semantic roles

Non-dative stems		Dative stems	
<i>ma:pa:nú:</i>	‘A removes X’	<i>ma:pa:nu:ni’()</i>	‘A removes X from Y’
<i>tatze’q-</i>	‘A hides’	<i>tatze’qni’()</i>	‘A hides from Y’
<i>ma:tze’q-</i>	‘A hides X’	<i>ma:tze’qni’()</i>	‘A hides X from Y’
<i>ma:pú:</i>	‘A puts X into fire’	<i>ma:pu:ni’()</i>	‘A puts X into fire for Y’
<i>qaxmát-</i>	‘A hears X’	<i>qaxma’tni’()</i>	‘A obeys command X from Y’

The applied object added by *-ni’* may be a SOURCE, as seen in (779).

(779) *Kaqaxpá’tni’ kintzi:’ká’n!*

<i>ka-qaxpá’t-ni’-Ø</i>	<i>kin-tzi:’-ka’n</i>
OPT-hear:2SG.SUB-DAT:2SG.SUB-PFV	1POSS-mother-PL.POSS
‘Obey our mother!’	
Lit. ‘You listen to our mother!’	

The addition of the suffix *-ni’* to the verb stem *qaxmát-* ‘A hears X’ in (779) derives a new stem *qaxma’tni’()* ‘A obeys command X from Y’, which includes in its meaning an applied object expressing the SOURCE of the event described by the verb.

Finally, one dative stem in the database is highly idiosyncratic, in that the addition of the suffix *-ni’()* with the verb *wili:* ‘A puts X down’ does not change the valency of the verb, as illustrated in (780).

(780) *Kit i’kwili:ni’ni:’t u:’tzá’.*

<i>kit</i>	<i>i’k-wili:-ni’-ni:’t</i>	<i>u:’tzá’</i>
PRN.1SG	1SG.SUB-put-DAT-PF	PRN.3SG
‘I have hit him.’		

The example in (780) shows that the verb *wili:ni’()* is highly lexicalized, where the addition of the suffix *-ni’()* derives a new verb meaning ‘A hits/strikes X’ where the object expresses a MALEFICIARY but the suffix does not change the transitivity of the underived stem.

The suffix that is cognate with *-ni’()* in other Totonacan languages is referred to as the “benefactive” or “dative” and is commonly described as adding more varied semantic roles to the meaning of the underived verb stem (Tlachichilco: Watters 1988: 187–199, Coatepec: McQuown 1990: 179, Cerro del Carbón: Levy 2002b, Filomeno Mata:

McFarland 2009: 152–154, Upper Necaxa: Beck 2011a). In other Totonac languages such as Coatepec Totonac, the suffix that is cognate is referred to as “indirective” in McQuown (1940). In Misantla Totonac, the suffix is described as adding an object expressing GOAL, SOURCE, or BENEFICIARY (MacKay 1999: 260-263). With verbs that have an implicit indirect object, Watters (2017a: 181) describes the applied dative object as being potentially ambiguous between expressing more than one semantic role in the same construction for Tlachichilco Tepehua. Watters further describes the cognate suffix as introducing an applied object or an adjunct to the verb phrase (Watters 2017a: 181). In ZT, the dative similarly introduces an applied object that can take a wide range of semantic roles that depend on the context and meaning of the verbal base. For the most part, the types of objects that are involved in the event structure of dative stems are wide ranging.

6.1.2.2 Instrumental

The instrumental prefix *li:-* introduces an applicative object generally expressing an INSTRUMENT or REASON to the meaning of the underived base verb. The prefix that is cognate with the instrumental in other Totonacan languages has also been described as adding an INSTRUMENT or REASON as well as more diverse roles (Tlachichilco: Watters 1988, Huehuetla Tepehua: Kung 2007a). Croft (1991) discusses how instrumental applicatives in some languages have syncretized to introduce a variety of roles into the clause, which cross-linguistically include roles such as INSTRUMENT, MANNER, MEANS, and LOCATIVES. In ZT, the instrumental seems to generally add an INSTRUMENT or REASON, as well as SOURCE, MEANS or INANIMATE CAUSE. Additionally, instrumental stems may also have some idiosyncratic meanings and the instrumental prefix’s use as an applicative may be grammaticalizing into an affix that licenses a subordinate clause. The instrumental use of *li:-* is seen by comparing the example in (781) with (782).

(781) *Ka:laka:'yi:'tít xa'ná:t.*

ka:-lak-ka:'-ya:-tit	xa'ná:t
PL.OBJ-INTNS-cut-IMPF-2PL.SUB	flower
'You all chop the flowers.'	

(782) *Li:laká:'lh acháj kí'wi'.*

li:-lak-ka:'lh acháj kí'wi'
INST-INTNS-cut-PFV ax wood

'He chopped the wood with the ax.' [FAS: Cut & Break 48a]

The example in (781) contrasts the transitive stem *laká:'* 'A chops X' with the instrumental derived stem in (782). The verb stem in (781) takes two arguments, the AGENT marked with *-tit* (2PL.SUB) and the PATIENT *xa'ná:t* 'flower' marked with *ka:-* (PL.OBJ) on the verb. The addition of the instrumental prefix *li:-* to the base verb in (782) forms a trivalent verb stem *li:laká:'* 'A chops X with Y' with two overt nominal objects, a PATIENT *kíwi* 'wood' and the applied object — the object added by the applicative affix — which in this case expresses the INSTRUMENT, *acháj* 'ax', used to carry out the action expressed by the base verb.

It is important to note that the instrumental prefix *li:-* has as an allomorph *le:-* in certain environments, as seen in (783)-(784); the instrumental allomorph has been bolded on the orthographic line.

(783) *I'**kle:**a'qatuyujmá:'.*

i'k-**li:**-a'qatuyúj-ma:'
1SG.SUB-INST-worry-IMPF-PROG

'I am worrying (about it)...' [RVA: Cuentos 91]

(784) ***Le:**qalhto:'qá'.*

li:-qalhto:'qá'-Ø
INST-sing-IMPF

'S/he sings it'

The instrumental prefix *li:-* is realized as *le:-* before verb stems that begin with a low vowel, as in (783) or a uvular obstruent, as in (784).

Some more prototypical uses of instrumental stems are exemplified below. The INSTRUMENT added by *li:-* may refer to the instrumental use of a part of the body, as in (785).

(785) *Li:lakpú'xli' i'xmakán lú'xu'.*

li:-lakpú'x-lí' i'x-makán lú'xu'
INST-break.by.pulling-PFV 3POSS-hand cloth

'She ripped the cloth with her hand.' [FAS: Cut & Break 34a]

The bivalent stem *lakpú'x-* ‘A tears X by pulling’ becomes trivalent *li:lakpú'x-* ‘A tears X with Y by pulling’ in (785). The instrumental stem takes two overt nominal objects, the PATIENT *lú'xu'* ‘cloth’ and the INSTRUMENT expressing the part of the body, *i'xmakán* ‘her hand,’ used to carry out the action denoted by the verb.

The applied object added by *li:-* expresses the INSTRUMENT that is an INANIMATE CAUSE or MEANS for the event, in (786)-(788).

(786) *I'kli:cha'qxlálin kí'wi' tu:n te:máka'. Ponqx i'ktojó:li nakxká:n.*

*i'k-**li**:-che'qxlá-lh=i=nak* *kí'wi'* *tu:≡n* *te:-máka'*
 1SG.SUB-INST-stumble-PFV≡JUNCT=LOC tree NREL≡JUNCT PATH-throw:2SG.SUB

ponqx *i'k-tojó:-lh=i* *nak=xka:n*
 splash 1SG.SUB-be.immersed-PFV≡JUNCT LOC=water

‘I stumbled on the stick that you dropped in passing, and I fell in the water.’ [FAS: Woodchopper 24]

(787) *Li:kilhchi'chínli' kapén sqá'ta'.*

***li**:-kilh-chi'chín-li'* *kapén* *sqá'ta'*
 INST-mouth-burn-PFV coffee child
 ‘The child burned her mouth with the coffee.’
 Lit. ‘The coffee mouth-burned the child.’

(788) *Li:tlawakán taskí't chauj.*

***li**:-tlawá-kan* *taskí't* *chauj*
 INST-make-IDF:IMPF dough tortilla
 ‘Tortillas are made with dough.’

The example in (786) shows that with the verb *che'qxlá* ‘A stumbles’, the instrumental adds an applicative object that gives rise to the stumbling event, deriving the verb stem *li:che'qxlá* ‘A stumbles on Y’. The applicative object, *kí'wi'* ‘tree, stick’ is not used as a prototypical INSTRUMENT, but is rather the MEANS, or an INANIMATE CAUSE as in Waters (1988), for the event expressed by the base verb. The instrumental derivative *li:kilhchi'chín* ‘A burns one’s mouth with X’ in (787) takes an overt nominal object *kapén* ‘coffee,’ which expresses the INANIMATE CAUSE referring to the liquid substance from which the action came about. In (788), the INSTRUMENT introduced by the prefix *li:-* is the ingredient, *taskí't* ‘dough,’ which is the MEANS used in making tortillas or the SOURCE from which tortillas are made; the verb is inflected for the indefinite subject, which backgrounds the expression of the subject.

The applied INSTRUMENT may also refer to currency, as in (789).

(789) *Li:tama:wa:kán pa:lh kú'xi' tu: chu: nawakutúna'.*

li:-tama:wá:-kan pa:lh kú'xi' tu: chu: na-wa-kutun-a'
 INST-buy-IDF:IMPF like corn NREL PTCL FUT-eat-DSD-IMPF:2SG.SUB
 '(Money) buys things, like corn, or whatever you want to eat.' [RVA: Cuentos 61]

With the verb *tama:wá:* 'A buys X', the instrumental prefix derives a trivalent stem, *li:tama:wá:* 'A buys X with Y', which seems to include in its meaning the instrumental object referring to money.

The use of the instrumental prefix to add an object expressing the REASON for the event is seen by comparing (790) with (791).

(790) *Ku'chú:lh.*

ku'chú:-lh
 cure-PFV
 'S/he cured him/her.'

(791) *Kwan u:'tzá' li:ku'chu:nún tzamá: xka:n.*

i'k-wan-Ø u:'tzá' **li:**-ku'chú:-nun-Ø tzamá: xka:n
 1SG.SUB-say-IMPF PRN.3SG INST-cure-AP-IMPF that water
 'I say that's why that water cures.' [SLO: Cuentos 108]

The bivalent verb stem *ku'chú:* 'A cures X' becomes trivalent with the instrumental prefix, deriving the verb stem *li:ku'chú:* 'A cures X because of Y' in (791). The verb form is in the antipassive, which backgrounds the expression of the object referring to the PATIENT. The instrumental argument is expressed pronominally with *u:'tzá'* (PRN.3SG) in (791), which commonly appears in preverbal positions with this use of the instrumental. The instrumental prefix used to express the REASON for the event denoted by the verb is often introduced by the demonstrative pronoun *u:'tzá'* 'that', as in (792)-(793).

(792) *U:'tzá' li:ma'qta:yá li:ma'qta:yá kiristiános.*

u:'tzá' **li:**-ma'qta:yá-Ø **li:**-ma'qta:yá-Ø kiristiános
 PRN.3SG INST-help-IMPF INST-help-IMPF people
 'That's why (the water) helps; that's why it helps people.' [SLO: Cuentos 109]

(793) *U:'tzá' kit i'kli:laqxtá' u:'tzá' i'kli:maqá'ni kinlaqxta'ját.*

u:'tzá' kit i'k-li:-laqxtá'-Ø
 PRN.3SG PRN.1SG 1SG.SUB-INST-drip-IMPF

u:'tzá' i'k-li:-maqá'n=i kin-laqxta'ját
 PRN.3SG 1SG.SUB-INST-throw:IMPF=JUNCT 1OBJ-tears
 'That's why I cry; that's why I sob.' [RVA: Cuentos 82]

The transitive bivalent verb stem *ma'qta:yá* 'A helps X' becomes trivalent with the instrumental, *li:ma'qta:yá* meaning 'A helps X because of Y' in (792). The instrumental stem *li:laqxtá'* means 'A cries because of Y' in (793). In each example, the applied instrumental argument is expressed by the demonstrative pronoun *u:'tzá'* 'that' in preverbal position. The demonstrative pronoun is used anaphorically in the context of the narrative to refer to the REASON for the action described by the verb previously conveyed by the speaker.

The instrumental may also encode an object that expresses the REASON of an event in the form of a subordinate clause, as seen in (794)-(795). This use of the instrumental may indicate that the prefix is grammaticalizing into an affix that signals a subordinate clause.

(794) *I'kle:a'qatuyujmá:' tu: chu: na'kwá.*

i'k-li:-a'qatuyúj-ma:' tu: chu: na-i'k-wa
 1SG.SUB-INST-worry-IMPF-PROG NREL PTCL FUT-1SG.SUB-eat
 'I worry about what I'm going to eat...' [RVA: Cuentos 91]

(795) *Tzu'ku'paláka' li:kilhchuya:kán e:' li:kilhchuya:kán chi: lha: la xtapali: xla xmákni'.*

tzu'ku'-pala-ka' li:-kilh-chuyá:-kan e:'
 begin-RPT-IDF:PFV INST-mouth-crazy-IDF:IMPF and

li:-kilh-chuyá:-kan chi: lha: la-Ø i'x-tapali:-Ø
 INST-mouth-crazy-IDF:IMPF PTCL NEG do-IMPF PST-change-IMPF

xla i'x-mákni'
 PRN.3SG 3POSS-body

'Again they started making fun of him and making fun of him because he could not change his body.' [RPL: Chameleon 35]

The intransitive stem *a'qatuyuj* 'X worries' in (794) becomes transitive with the instrumental prefix deriving the stem *le:a'qatuyuj* 'X worries about Y', which includes in its meaning the REASON expressed by the relative clause beginning with *tu: chu:* 'what'.

The instrumental prefix on the verb stem *li:kilhchuyá*: ‘A makes fun of X because of Y’ in (795) adds the subordinate clause expressing the REASON for the event, which is introduced with the particle *chi:*, which functions to add a complement clause where in this example the particle functions like the conjunction “because” in English (see §3.5.2).

Some of the instrumental derivatives found in the database are illustrated in Table 57 with the meanings documented for each stem.

Table 57: Instrumental verb stems that take an applied object expressing an INSTRUMENT or REASON

Non-instrumental stems		Instrumental stems	
<i>a'qatuyúj</i>	'A worries about X'	<i>le:aqatuyúj</i>	'A worries about X because of Y'
<i>chi:'</i>	'A ties X'	<i>li:chi:'</i>	'A ties X with Y'
<i>che'qxlá</i>	'A stumbles'	<i>li:che'qxlá</i>	'A stumbles on Y'
<i>kilhchi'chín</i>	'A burns one's mouth'	<i>li:kilhchi'chín</i>	'A burn one's mouth with Y'
<i>kalhwán</i>	'A cries'	<i>li:kalhwán</i>	'A cries because of Y'
<i>ku'chú:</i>	'A heals X'	<i>li:ku'chú:</i>	'A heals X with Y/because of Y'
<i>laká:'</i>	'A chops X'	<i>li:laká:'</i>	'A chops X with Y'
<i>lakpu'x-</i>	'A breaks X'	<i>li:lakpux-</i>	'A breaks X with Y'
<i>laqxtá'</i>	'A drips, gets wet'	<i>li:laqxtá'</i>	'A gets wet with Y/ because of Y'
<i>la</i>	'A does'	<i>li:lá</i>	'A does because of Y'
<i>li:puwán</i>	'A is sad'	<i>li:li:puwán</i>	'A is sad because of Y'
<i>lhtatá</i>	'A sleeps'	<i>li:lhtatá</i>	'A sleeps because of Y'
<i>ma:spi't-</i>	'A returns X'	<i>li:ma:spi't-</i>	'A returns X because of Y'
<i>ma:tzumá:</i>	'A fills X'	<i>li:ma:tzumá:</i>	'A fills X with Y'
<i>ma'qta:yá</i>	'A helps X'	<i>li:ma'qta:yá</i>	'A helps X because of Y'
<i>ma:a'qsputú:</i>	'A makes X finish'	<i>li:ma:a'qsputú:</i>	'A makes X finish because of Y'
<i>maqachi'pa:xnán</i>	'A supports oneself'	<i>li:maqachi'pa:xnán</i>	'A supports oneself with Y'
<i>min</i>	'A comes'	<i>li:min</i>	'A comes because of Y'
<i>ma:wí:'</i>	'A feeds X'	<i>li:ma:wí:'</i>	'A feeds X with Y'
<i>tama:wá:</i>	'A buys X'	<i>li:tama:wá:</i>	'A buys X with Y'
<i>tatzumá:</i>	'A fills X'	<i>li:tatzumá:</i>	'A fills X with Y'
<i>tayá</i>	'A stands up'	<i>li:tayá</i>	'A stands up because of Y'
<i>tlawá</i>	'A makes X'	<i>li:tlawá</i>	'A makes X with Y'
<i>tu'kx-</i>	'A breaks X'	<i>li:tu'kx-</i>	'A breaks X with Y'
<i>tu'ks-</i>	'A hits X'	<i>li:tu'ks-</i>	'A hits X because of Y'
<i>tzeyán</i>	'A gets better'	<i>li:tzeyán</i>	'A gets better because of Y'
<i>tzi'tzí'n</i>	'A is warm'	<i>li:tzi'tzí'n</i>	'A is warm because of Y'
<i>wan</i>	'A is a certain way'	<i>li:wán</i>	'A is a certain way because of Y'

While Table 57 demonstrates some of the instrumental derivatives of verb stems that take

an applied object expressing an INSTRUMENT or REASON, other instrumental stems may form more idiosyncratic verbs, such as (796)-(797).

(796) *Le:qalhto:'qá'*
li:-qalhto:'qá'
 INST-sing
 'S/he sings it'

(797) *I'kle:qalhti:lh chauj puská:t.*
 i'k-**li:-**qalhti:-lh chauj puská:t
 1SG.SUB-INST-respond-PFV tortillas woman
 'I promised tortillas for the woman.'

The bivalent transitive stem *qalhti:* 'A responds to X' in (797) is made trivalent with *li:-* deriving the form *li:qalhti:* 'A responds to X with Y', although in this context, it means 'A promises Y to X', which includes in its meaning an applied object expressing a THEME represented by "Y". The intransitive stem *qalhto:'qá'* 'A sings' becomes transitive with the instrumental in deriving the verb *le:qalhto:'qá'* 'A sings Y', which also includes in its meaning an object expressing something like a THEME.

With the verb *chiwinán* 'A speaks', the instrumental *li:-* may be grammaticalizing as a marker that adds the topic of conversation, as in (798).

(798) *E:' chu:n tzamá: talaná' tu:n lhúli li:chiwinálh nai'xchik.*
 e:' chu:n tzamá: talaná' tu:n lhu-lh **li:-**chiwinán-lh
 and PTCL that hunter PTCL do-PFV INST-speak-PFV

 nak=i'x-chik
 LOC=3POSS-house
 'And that hunter, he does, he speaks about it in his house.' [Cuentos: 21]

The instrumental derivative *li:chiwinán* 'A speaks about Y'(where "Y" represents the applicative object) introduces the topic of discourse, or a THEME, in (798), which in this context refers to how the hunter discovered holy water at the top of the mountain in the community of Zihuateutla.

Table 58 summarizes the verb stems with the prefix *li:-* that introduce objects with non-prototypical semantic roles.

in some stems add meanings resembling the comitative as has been noted in other languages (Croft 1991).

In ZT, the instrumental prefix adds a variety of applied objects that form stems that include the INSTRUMENT or REASON for the event as well as forming idiosyncratic stems. The prefix may further signal the subordination of a finite clause, commonly expressing a REASON. The prefix *li:-*, which is cognate in many other Totonacan languages (Apapantilla: Reid 1991, Upper Necaxa: Beck 2011a), is also described as adding an INSTRUMENT or REASON to the meaning of the verb stem. In Upper Necaxa, verbs stems with the instrumental *li:-* are described as being ambiguous between introducing an INSTRUMENT or REASON to the meaning of the clause (Beck 2014: 13). The prefix *li:-* has also been described as indicating the subordination of a finite clause in expressions of motive, or as introducing the topic of conversation (Misantla: MacKay 1999: 277-280, Upper Necaxa: Beck 2004: 61). In the Tepehua languages, the cognate prefix *lhi:-* adds a wider range of semantic roles, including MOTIVE, INANIMATE CAUSE, and DIRECTION, whereas the applicative that introduces an INSTRUMENT is expressed with the prefix *pu:-* (Tlachichilco: Watters 1988, Huehuetla Tepehua: Kung 2007a). These uses of the instrumental in ZT discourse is another area for future investigation.

6.1.2.3 Comitative

The comitative prefix *ta:ʼ-* in ZT increases the valency of the verb by adding an object expressing a co-AGENT. The cognate suffix in many Totonacan languages has also been described as adding an animate object that performs the action denoted by the verb with someone else, usually the subject (Apapantilla Totonac: Reid 1991, Huehuetla Tepehua: Kung 2007a, Ozelonacaxtla Totonac: Román Lobato 2008, Upper Necaxa Totonac: Beck 2011a). The comitative in ZT is also found forming a few stems that introduce an INSTRUMENT as has been typologically observed in other languages (Mithun 2002b), which is somewhat idiosyncratic for ZT since instrumental objects are more typically included in the meaning of instrumental stems with *li:-* as described in §6.1.2.2.

A comitative stem expressing a co-AGENT is illustrated here by comparing the example in (801) with the comitative derivative in (802).

(801) *Taa'lh i'xtantutú:nká'n.*

ta-a'n-lh i'x-tan-tutú:n-ka'n
 3PL.SUB-go-PFV 3POSS-NUM.CLF-three-PL.POSS
 'The three of them went.' [RLP: Chameleon 25]

(802) *Lakxtím kit lha: i'ka:ta:'álh kilakstín i'ka:ta:'álh kina:ta:'nátna' kinlakxu:yá:n.*

lakxtím kit lha: i'k-ka:-ta:'-a'n-lh kin-lakstín
 together PRN.1SG where 1SG.SUB-PL.OBJ-CMT-go-PFV 1POSS-children

i'k-ka:-ta:'-a'n-lh kin-na:ta:'nátna' kin-lakxu:yá:n
 1SG.SUB-PL.OBJ-CMT-go-PFV 1POSS-grandchild 1POSS-great.grandchildren
 '(What I want) is to go with my children, and to go with my grandchildren and
 great grandchildren.' [RVA: Cuentos 83]

The example in (801) contrasts the intransitive verb *a'n* 'A goes' with its comitative counterpart in (802), *ta:'án* 'A goes with Y'. The comitative prefix adds an object expressing an animate or sentient participant that engages in the action with the AGENT or subject of the clause.

Table 59 illustrates some of the comitative forms found in the database.

Table 59: Comitative verb stems that add an applied object expressing a co-AGENT

Non-comitative stems		Comitative stems	
<i>a'n</i>	'A goes'	<i>ta:'án</i>	'A goes with Y'
<i>min</i>	'A comes'	<i>ta:'mín</i>	'A comes with Y'
<i>chiwi:nán</i>	'A speaks'	<i>ta:'chiwi:nán</i>	'A speaks with Y'
<i>la</i>	'A does'	<i>ta:'lá</i>	'A does with Y'
<i>tatze:q-</i>	'A hides'	<i>ta:'tatze:q-</i>	'A hides with Y'
<i>pu:á'n</i>	'A rides X'	<i>ta:'pu:á'n</i>	'A rides X with Y'
<i>skuj-</i>	'A works'	<i>ta:'skuj-</i>	'A works with Y'
<i>pi'ks-</i>	'A breaks X off'	<i>ta:'pi'ks-</i>	'A shares X with Y by breaking off'
<i>maqni:</i>	'A kills X'	<i>ta:'maqni:</i>	'A kills X with Y'
<i>tawilá ~ tulá</i>	'A sits down'	<i>ta:'tawilá</i>	'A lives with Y, marries Y'
<i>latawilá</i>	'A is seated'	<i>ta:'latawilá</i>	'A lives with Y'

Table 59 displays some derived comitative stems, whereby the prefix *ta:'-* generally adds an animate event participant to the meaning of the clause.

While some of the few comitative forms of verbs that were documented are semantically compositional, the table also shows that the derived comitative stem may be semantically idiosyncratic, as with ‘sit down’ and ‘die’ illustrated here in (803)-(804).

(803) *Xla xli:juésa nata:'tawilá.*
 xla i'x-li:-juésa na-**ta:'**-ta-wilá
 PRN.3SG 3POSS-INST-obligation FUT-CMT-INCH-sit:IMPF
 Lit. ‘She will sit together with someone out of obligation.’
 ‘She should get married.’

(804) *Ta:'maqni:*
ta:'-maq-ni:
 CMT-ALN-die
 ‘S/he kills him/her with it’

The comitative derivative of *tawilá* ‘A sits down’ in (803) forms the stem *ta:'tawilá* literally meaning ‘A sits down with Y,’ although the verb is lexicalized to mean ‘A marries Y’, which forms the basis of a common cross-linguistic metaphor (see Mithun (1998) for Central Pomo and Rice (2012) for Athapaskan for a similar metaphor). In (804), the comitative derivative of *maqni:* ‘A kills X’ forms a ditransitive verb that includes in its meaning an INSTRUMENT, or the object used in the action expressed by the non-comitative stem. This somewhat idiosyncratic use of the comitative applicative to introduce an object expressing an INSTRUMENT is however not cross-linguistically uncommon, since instrumentals and comitatives tend to grammaticalize both comitative and instrumental functions (Mithun 2002b).

There are not many comitative forms documented in ZT. In its most compositional forms, the comitative stems seem to include in its meaning an additional event participant that is a co-AGENT in the event described by the verb, although other comitative stems are rather idiosyncratic. In almost all Totonacan languages, the comitative prefix is realized as *ta:'-* or *ta:-* with or without the laryngeal vowel (Apanantilla Totonac: Reid 1991, Upper Necaxa Totonac: Beck 2011a, Ozelonacaxtla: Román Lobato 2008, Huehuetla Tepehua: Kung 2007a: 377), with the exception of Misantra Totonac, where the applicative that introduces a comitative object is the comitative circumfix *la:--na* (MacKay 1999: 287).

6.1.2.4 Allative

The allative prefix *la'q-* adds an object expressing a GOAL to verbs that denote motion or direction from one place to another. Not all Totonacan languages have an allative affix and in fact only in Upper Necaxa Totonac has this prefix been described as an allative that appears with only a few verbs (Beck 2004, 2011). In ZT, the allative affix can be seen by comparing the example in (805) with (806) and (807) with (808).

(805) *Tu'jnúnli' jú:ki' chu:wáj...*
tu'jnún-li' jú:ki' chu:wáj
run-PFV deer now
'The deer ran now...' [FAS: Frog story 29]

(806) *La'qtu'jnúnli' kilaqapa:'sní'n.*
la'q-tu'jnún-li' kin-laqapa:'sní'n
ALL-run-PFV 1OBJ-uncle
'He ran toward my uncle.'

(807) *I'ka'má:'.*
i'k-a'n-ma:
1SG.SUB-go-PROG
'I am going.'

(808) *Kla'qa'má:' xka:n.*
i'k-**la'q**-a'n-ma:' xka:n
1SG.SUB-ALL-go-PROG water
'I'm going to the water.'

The intransitive stems in (805) and (807) are made transitive with the allative prefix in (806) and (808). The allative morpheme adds an applied object expressing the DIRECTION or GOAL to the event denoted by verb stem, meaning 'X moves in the direction of Y'.

Table 60 lists all the derived allative (ALL) stems found in the ZT database.

Table 60: Allative verb stems with *la'q-* that have applied object expressing GOAL

Non-allative stems		Allative stems	
<i>a'n</i>	‘A goes’	<i>la'qá'n</i>	‘A goes to Y’
<i>min</i>	‘A comes’	<i>la'qmín</i>	‘A comes to Y’
<i>tu'jnún</i>	‘A runs’	<i>la'qtu'jnún</i>	‘A runs to Y’
<i>talakatzunajé:</i>	‘A gets close’	<i>la'qtalakatzunajé:</i>	‘A gets close to Y’

The stems in Table 60 demonstrate that the allative prefix combines with verbs of motion to express the fact that the subject or AGENT moves in the direction of the applied object expressing the GOAL.

The example in (809) shows that the prefix *la'q-* can also introduce an animate applied object that is marked on the verb with object morphology.

(809) *I'xmín ka:chi'páx ka:la'qtalakatzunajé:*.

i'x–min ka:–chi'pá i'x–ka:–**la'q**–ta–laka–tzunajé:
 PST–come PL.OBJ–grab PST–PL.OBJ–ALL–DCS–face–close
 ‘(The witch) used to come grab them as she got close to them.’
 [MCC: Witch story 3]

The intransitive stem *talakatzunajé:* ‘A gets close’ becomes transitive, *la'qtalakatzunajé:* ‘A gets close to Y’, which includes in its meaning an animate GOAL, the children, which is marked on the verb with *ka:-* (PL.OBJ). There are not many examples of allative constructions in the database. Beck (2011a) for UNT describes the allative as productively combining with motion verbs, like *a'n* ‘go’ and *min* ‘come’, but not with a wide range of other verb stems. In Apapantilla Totonac, Reid (1991: 29) refers to the prefix that may be cognate with the allative as a proximal. Rice and Kabata (2012), however, argue that cross-linguistically allative markers have a wide range of semantic and grammatical functions that may be used to indicate dative, benefactive, purposive, and other case roles and so the uses and types of verbs that the allative combines with in ZT warrant further documentation.

6.1.3 Decausative

The decausative (DCS) prefix *ta-* has different functions depending on the transitivity of the

verb. With intransitive dynamic stems, the prefix *ta-* adds an aspectual inchoative or inceptive reading to the meaning of the underived verb. In this use the decausative resembles the inchoative (INCH) prefix *ta-* found on stative verbs (see §5.3). With transitive stems, however, the decausative reduces the valency of the verb by removing the expression of the AGENT. These constructions resemble the middle voice or middle passives by highlighting the affected subject and emphasizing the internal structure of an action or event (Kemmer 1993). Since further documentation is needed to determine if the decausative functions more like a middle voice in ZT, the label “decausative” is maintained here following Beck (2004, 2011).

An intransitive decausative stem is shown here in (810).

(810) *E:' naktamo:'qó'sa. Naka'nta:kí:' nakxká:n.*

e:' na-i'k-**ta**-mo:'qó's-a na-i'k-a'nta:kí:'-Ø nak=xka:n
 and FUT-1SG.SUB-DCS-fall-IMPF FUT-1SG.SUB-go.suddenly-IMPF LOC=water
 ‘And I'm going to fall. I'm going to end up in the water.’ [FAS: Woodchopper 11]

The example in (810) shows that the addition of the prefix *ta-* to the dynamic intransitive stem *mo:'qó's-* ‘A falls’ does not change the transitivity of the verb but highlights the initial process or activity of falling in the water.

With transitive dynamic verbs, the decausative prefix *ta-* decreases the number of arguments the verb stem can take by removing the AGENT. The object of the underived base becomes the subject of the decausative stem, as seen by comparing (811) and (813) with the decausative derived stems in (812) and (814).

(811) *Lakxti'tli' lúxu'.*

lak-xti't-li' lúxu'
 INTNS-rip-PFV cloth
 ‘She ripped the cloth.’ [FAS: Cut & Break 1a]

(812) *Taxti'tli'.*

ta-xti't-li'
 DCS-rip-PFV
 ‘It ripped.’ [FAS: Cut & Break 1b]

(813) *Li:tú'kxli' i'xmakán kí'wi'.*
 li:-tu'kx-li' i'x-makán kí'wi'
 INST-break-PFV 3POSS-hand stick
 'She broke the stick with her hands.'

(814) *Kí'wi' tatú'kxli'.*
 kí'wi' ta-tu'kx-li'
 stick DCS-break-PFV
 'The stick broke.'

The examples in (811)-(812) were in response to the Cut and Break video clips developed by the Max Plank Institute of Psycholinguistics (Bohnemeyer, Bowerman, Brown 2001). These examples were elicited with a video clip of a woman ripping a piece of cloth. The reply with the verb stem *lakxti't-* 'A rips X (into pieces)' was in response to the question *tu: chu: lhawálh puská:t?* 'What did the woman do?' in (811). The decausative form of the verb *taxti't-* 'X rips' in (812) was in response to the question *tu: chu: lani'lh a'jmá: talhakán?* 'What happened to the cloth?' Similarly, the decausative *ta-* added to the transitive stem with *tukx-* 'A breaks X' in (813) does not include the expression of the agentive subject in the decausative stem *tatú'kx-* 'X breaks,' in (814). The decausative prefix *ta-* decreases the valency of dynamic stems, and expresses the fact that a non-agentive subject, namely, the object of the underived verb, is affected by or comes into a state as a result of the action.

Table 61 illustrates some of the decausative derivatives of transitive dynamic stems in the database.

Table 61: Decausative verb stems with *ta-*

Non-derived stems		Decausative stems	
<i>*ki:'</i>	‘A lifts X’	<i>taki:'</i>	‘X gets up’
<i>chi'kí:'</i>	‘A shakes X’	<i>tachi'kí:'</i>	‘X shakes, trembles’
<i>chi:'</i>	‘A ties X up’	<i>tachi:'</i>	‘X gets tied up’
<i>tu'kx-</i>	‘A breaks X’	<i>tatu'kx-</i>	‘X breaks’
<i>pu'x-</i>	‘A breaks X’	<i>tapu'x-</i>	‘X breaks’
<i>xiti't-</i>	‘A tears, rips X’	<i>taxti't-</i>	‘X tears, rips’
<i>pali:</i>	‘A changes X’	<i>tapali:</i>	‘X changes’
<i>sli't-</i>	‘A pulls X’	<i>tasli't-</i>	‘X straightens out’
<i>ma'qta'qá'lh-</i>	‘A cares for X’	<i>tama'qta'qá'lh-</i>	‘A cares for oneself’
<i>qalhswik-</i>	‘A shaves X’	<i>taqalhswik-</i>	‘A shaves oneself’
<i>tzoq-</i>	‘A writes X’	<i>tatzog-</i>	‘A writes X on oneself’

Table 61 demonstrates that decausative stems do not include in its meaning a semantic AGENT of the clause but rather that the object of the underived stem is affected by the action or event denoted by the verb. The decausative may function to place the focus on the process or action while eliminating or downplaying the AGENT of the event.

Table 61 further shows that some decausative stems take a reflexive reading, which is also reflective of the functions of middle voice constructions, as in (815).

- (815) *U:'tunún kintataqalhswikni'lh.*
 u:'tunún kin-ta-ta-qalhswik-ni'-lh
 they 1OBJ-3PL.SUB-DCS-shave-DAT-PFV
 ‘They shaved (themselves) for me.’

The transitive stem *qalhswik-* ‘A shaves X’ takes a reflexive reading with the addition of the decausative prefix *ta-* deriving *tama'qta'qá'lh-* ‘A shaves oneself’ in (815).

The decausative *ta-* in ZT reduces the valency of transitive verbs and attributes a middle voice-like reading with both intransitive and transitive stems, and with some verbs a reflexive interpretation. In UNT, Beck (2011a) describes the prefix that is cognate with the decausative as only reducing the valency with verbs that have highly affected PATIENTS. In Filomeno Mata Totonac, the cognate prefix is referred to as a marker of middle voice with

resultative verbs, and inceptive with positional verbs (McFarland 2009: 144). For Huehuetla Tepehua, Kung (2007a: 286) describes the prefix as an aspectual derivational affix that appears with both dynamic and stative bases. In ZT, the decausative (DCS) prefix *ta-* may be related to the inchoative (INCH) prefix *ta-* which is found in derivations with stative verbs as discussed in §5.3. The decausative and inchoative both attribute the sense of a non-agentive subject coming into the state of the action denoted by the verb, and only with transitive stems does the prefix *ta-* decrease the verb valency. However, the relation between the decausative and inchoative and their functions as potentially a middle voice construct requires further assessment.

6.1.4 Alienative

The alienative (ALN) prefix *maq-* in ZT may have been historically related to a causative prefix (see above) and is cognate with forms sharing a similar function in other languages of the family (Coatepec Totonac: McQuown 1990, Misantla Totonac: MacKay 1990, Papantla Totonac: Levy 2002a, Upper Necaxa Totonac: Beck 2004). Synchronically, it seems that the causative use of this prefix has lexicalized and its more productive or predictable uses do not increase syntactic valency but do add an (implied) semantic participant to the meaning of the underived verb. In its most compositional uses, the alienative prefix *maq-* does not change the valency of the base verb and expresses the idea that the event described by the verb occurs in somebody else's domain, as seen by comparing the underived stems with the alienative derived examples in (816)-(819).

(816) *U:'tzá' matí'x ka:wa'má:' animáles.*

u:'tzá'	mat	i'x-ka:-wa'-ma:'	animáles
PRN.3SG	QTV	PST-PL.OBJ-eat-PROG	animals

'She says they were eating the animals.' [SLO: Cuentos 18]

(817) *Xla maqwá'lh i'xli:wá't a:'cha:'tín.*

xla	maq -wa'-lh	i'x-li:wa't	a:'-cha:'-tín
PRN.3SG	ALN-eat-PFV	3POSS-food	ADD-NUM.CLF-one

'She ate somebody else's food.'
Lit. 'She ate his food of him.'

(818) *Chi:n kaxli'jni', i'klaqayí: xalaqstala:nqá'n.*
 chi:n káxli'-ni' i'k-laqayí: xa-laq-stala:nqá'n
 PTCL chicken-PL 1SG.SUB-like DTV-APL-white
 'Of the chickens, I like the white ones.'

(819) *Xla maqlakayí: i'xpuská:t.*
 xla maq-lakayí: i'x-puská:t
 PRN.3SG ALN-like 3POSS-woman
 'He likes somebody else's wife.'
 Lit. 'He likes his wife (of him).'

The example in (816) contrasts the transitive bivalent verb *wá'* 'A eats X' with its alienative derivative, *maqwá'* 'A eats X that belongs to someone else' in (817); the object is expressed by the noun phrase *i'xli:wá't a:'cha:'tín* 'another person's food'. The alienative prefix *maq-* on the transitive bivalent verb *laqayí:* 'A likes X' in (818) derives a new stem, *maqlaqayí:* 'A likes X that belongs to someone else' in (819). Even though there is an implied third participant (i.e. the possessor of the food or wife), this participant is expressed with possessive morphology on the direct object noun phrase and the valency of the verb does not change. The alienative therefore introduces a non-core participant that is only implicitly expressed with possessive marking on the noun. The alienative construction may bare some resemblance to what is termed external possession in the typological literature (Payne and Barshi 1999). However, the possessor 'his, him' does not seem to constitute a core argument of the verb or a separate argument from the possessum. Since the possessor in alienative constructions expresses an indefinite or generic (fourth person) participant who is usually implied in the clausal predicate, it is difficult to tell if alienative constructions in general constitute canonical instances of external possession for which further diagnostics is required.

Table 62 illustrates some of the alienative derivatives that are found in the database.

Table 62: Alienative verb stems with *maq-* that have an implied third person participant

Non-derived stems		Alienative stems	
<i>lakayí:</i>	‘A likes X’	<i>maqlakayí:</i>	‘A likes X that belongs to someone else’
<i>tayá</i>	‘A takes X’	<i>maqtayá</i>	‘A takes X that belongs to someone else’
<i>wa'</i>	‘A eats/drinks X’	<i>maqwá'</i>	‘A eats/drinks X that belongs to someone else’
<i>wa'yán</i>	‘A eats/drinks’	<i>maqwa'yán</i>	‘A shares food or drinks with someone else’

While the alienative forms in Table 62 are described as not increasing verb valency, there are a few idiosyncratic stems in the database where the prefix *maq-* has valency-increasing effects, as demonstrated in Table 63.

Table 63: Valency-increasing verb stems with alienative *maq-* with applied objects expressing other semantic roles

Non-derived stems		Alienative stems	
<i>ni:</i>	‘A dies’	<i>maqní:</i>	‘A kills X’
<i>qalhá:n</i>	‘A steals X’	<i>maqalhá:n</i>	‘A steals X from Y’
<i>tayá:</i>	‘A stands’	<i>maqtayá:</i>	‘A helps X, A stands up for X’

The example in (820) contrasts the intransitive stem *ni:* ‘A dies’ with the alienative derived stem in (821).

(820) *Li:wá:q tani:qó:lh.*

li:wá:q ta-ni:-qo:-lh
 all 3PL.SUB-die-TOT-PFV
 ‘They all died.’

(821) *A'jnanú i'xmaqni:ma:'chá pá'xni'.*

a'jnanú i'x-**maq**-ni:-ma:'-chá pá'xni'
 over.there PST-ALN-die-PROG-DIST pig
 ‘He was killing a pig over there.’

The intransitive stem in (820) is made transitive in (821), *maqní:* ‘A kills X’ where the added object is expressed with the noun *pá'xni'* ‘pig’. These constructions do not involve a possessed applicative object, but rather show that *maq-* may in fact be historically related to a causative prefix that has been reanalyzed as an alienative in the synchronic grammar.

Verb stems with the prefix that is cognate with *maq-* in ZT has been similarly analyzed in these constructions as a fossilized form of a causative stem in other Totonacan languages (Misantla Totonac: MacKay 1990, Papantla Totonac: Levy 2002a, Upper Necaxa Totonac: Beck 2004).

In sum, the ZT alienative prefix *maq-* does not increase the syntactic valency of the verb but rather adds an implied semantic participant. The alienative prefix *maq-* may have been historically a valency-increasing affix although synchronically it adds a third-party implied possessor. A cognate prefix is found in several other Totonacan languages (Coatepec Totonac: McQuown 1990, Misantla Totonac: MacKay 1990, Papantla Totonac: Levy 2002a, Upper Necaxa Totonac: Beck 2004). In Papantla Totonac, Levy (2002a) describes the alienative morpheme as expressing that an action takes place outside of the domain of the subject and further observes that the prefix is valency-increasing in Papantla on a number of intransitive stems. In Upper Necaxa Totonac, Beck (2004) describes the cognate prefix as a ‘quasi-inflectional’ valency neutral affix, in that the prefix does not form new stems with most verbs and is fossilized with others. The cognate prefix in Misantla Totonac is described as a causative with some verb stems and as an applicative with others (MacKay 1990). In ZT, the alienative seems to be a derivational prefix that adds an (implied) semantic sentient participant that may have etymological roots as a causative which is still seen in some examples in the synchronic grammar.

6.1.5 Derived Verbs with Body-Part Terms

This section explores body-part terms that are used derivationally with verbs. Body-part terms (BPTs) incorporate with verb roots and stems to form new stems that have both transparent and compositional meanings, as well as idiomatic and highly lexicalized senses. BPTs incorporated with verbs alter the structure of the action or event by specifying a semantic entity which functions as a PATIENT, INSTRUMENT, or LOCATION, as suggested in Mithun (1984, 1997: 361). In most cases, the BPT no longer refers to the domain of the body but, generally speaking, narrows the scope of the verb (Mithun 1984) and forms highly figurative and idiosyncratic expressions. Although some body-part+stem combinations have an applicative function allowing the expression of an additional object argument, most BPTs incorporated with verbs do not change the valency of the stem.

Body-part roots incorporated with verb roots and stems form a tight unit in Totonacan and are subject to little allomorphy and all the regular inflectional patterns. In most Totonacan languages, these morphemes have been referred to as “body-part prefixes” or “lexical prefixes” (Watters 1988, Levy 1992a, Kung 2007a, McFarland 2009, Beck 2004, 2011, to name a few) and as the class of “parts” in Levy (1996, 1999a,b). Body-part morphemes are highly polysemous where the literal part is extended to denote sub-parts of objects and metaphorical extensions of these parts as well as topological and projective spatial relations (see §3.3.3). BPTs are additionally found combining derivationally with adjectives (cf. §3.3.1.5), nouns (cf. §4.3.4), and adverbs, and have grammaticalized as classifiers in the numeral system (cf. §3.4.3). As discussed in Chapter 3 in §3.3.3 and Chapter 5 in §5.3, BPTs commonly form compounds with stative verbs and stative posture verbs to form locative predicates. By contrast, this section focuses on some of the forms and functions of body-part terms incorporated with verbs in dynamic or active situations in ZT.

Body-part roots form complex stems with dynamic verb roots and stems in a variety of expressions that range from fully transparent to highly idiomatic. In their most transparent and literal uses, body-part terms incorporate with verb stems to indicate what Mithun (1997: 361) refers to as the semantic LOCATION of the action. The body-part root denotes the sub-part of the body (or by extension, an inanimate object) that is affected by the action described by the verb, narrowing the location of the action to a specific part of a whole, as seen in (822).³⁶

(822) *I'klakakú'nli'*
 i'k-**laka**-**ku'n**-li'
 1SG.SUB-**face**-**swell**-PFV
 Lit. 'I face-swelled.'
 'My face swelled up.'

The example in (822) shows that the body-part root incorporates with the intransitive verb *ku'n* ‘X swells’ deriving a new verb that specifies the LOCATION of the swelling event. The

³⁶ These types of constructions with incorporated body-parts resemble external possession constructions, also referred to as possessor raising and possessor ascension, in Payne and Barshi (1999). The possessor (or UNDERGOER) is a core argument of the verb, namely, the subject, and constitutes a separate argument from the argument structure expressed by the verb root.

addition of the body-part term does not change the valency of the verb and the single core argument, the UNDERGOER, which is the possessor of the body part, is expressed as the subject with the prefix *i'k-* (1SG.SUB). The body-part term narrows the scope of the verb by specifying the sub-part of the UNDERGOER that is affected by the swelling event.

Body-part terms incorporated with dynamic transitive verbs may also indicate the LOCATION of the action by selecting a sub-part of the possessor. The POSSESSOR of the part corresponds to the syntactic object expressed with object agreement morphology on the verb, as in (823)-(824).

(823) *Kinkilhtú'ksli'*.

kin-**kilh**-**tu'ks**-li'

1OBJ-**mouth**-**hit**-PFV

Lit. 'S/he mouth-hit me.'

'S/he hit me on the mouth.'

(824) *Kimpa:tú'ksli'*.

kin-**pa**-**tu'ks**-li'

1OBJ-**belly**-**hit**-PFV

Lit. 'S/he stomach-hit me.'

'S/he hit me in the stomach.'

The transitive verb *tu'ks-* 'A hits X' forms a compound with the body-part root, which expresses the part of the UNDERGOER that is affected by the action expressed by the verb. The possessor of the part is expressed as the object of the verb with the prefix *kin-* (1OBJ) indicating that the action affects the UNDERGOER and the body-part root specifies the LOCATION, the part of the possessor, that is directly affected by the hitting event. The use of a body-part term in these examples is an instance of PART FOR WHOLE metonymy, where the part of the body stands for the POSSESSOR (or UNDERGOER). Since the POSSESSOR (or UNDERGOER) is expressed inflectionally as an object of the verb, this may suggest that the effect the action has on the POSSESSOR is more primary than the effect the action has on the part, as suggested in Mithun (1984: 858).

Body-part stems have various functions and senses depending on the context and meaning of the verbal base from which idiosyncratic constructions are formed. For example, while the body-part term for 'mouth' expresses the semantic LOCATION of the action in (825), it expresses the semantic PATIENT in (826), and is used idiomatically in

(827). In these examples, the body-part root *kih-* ‘mouth’ has two suppletive allomorphs, *qalh-* and *qalha-* ‘(inner) mouth’.

(825) *Kinkilhtú'ksli'*.

kin-**kih**-tu'**ks**-li'

1OBJ-**mouth**-**hit**-PFV

Lit. ‘S/he mouth-hit me.’

‘S/he hit me in the mouth.’

(826) *I'qalhchaqán.*

i'k-**qalh**-**chaqán**

1SG.SUB-**mouth**-**wash**

Lit. ‘I mouth-wash.’

‘I wash my mouth./I brush my teeth.’

(827) *Ki:qalhaskini'ni'lh.*

ki:-**qalha**-**skin**-ni'-ni'-lh

RT-**mouth**-**ask**-DAT-2OBJ-PFV

Lit. ‘S/he mouth-asked you for something and returned.’

‘S/he went to ask you for something and returned.’

The body-part root *kih-* ‘mouth’ in (825) is similar to (823)-(824) above where the incorporated root specifies the LOCATION, or part, of the UNDERGOER affected by the action; the BPT forms again a PART FOR WHOLE metonymy, where it may denote the UNDERGOER of the action or POSSESSOR of the part, which is inflectionally marked on the verb as the syntactic object with *kin-* (1OBJ). The body-part stem in (826) differs, however, since the POSSESSOR is expressed as the AGENT with subject morphology *i'k-* (1SG.SUB) and the part of the body denoted by *qalh-* ‘mouth (interior), teeth’ functions as what Mithun (1984, 1997) refers to as the semantic PATIENT. The BPT *qalh-* in this example forms what Rice (2012) calls a GENERIC FOR SPECIFIC metonymy, since the root meaning ‘mouth’ or ‘inner mouth’ is extended to denote a more specific sub-part, namely the ‘teeth’. The lexicalized stem *qalhchaqán* ‘A mouth-washes’ in (826) is also the typical or conventional way of referring to the event of brushing one’s teeth. The body-part compound *qalha-* ‘mouth’ with *skini'* ‘A asks for Y’ is used idiomatically in (827). The BPT in this example may be used to indicate that the asking event is a verbal one (cf. *lakaski'n* (*laka-* ‘face’ + *ski'n* ‘ask’ ‘A wants/desires X’)). These examples show that three different morphological forms of related body-part denoting terms are used in different types of expressions in unpredictable

ways in both form and function indicating the highly lexicalized nature of these stems.

Incorporated body-part terms may also denote the semantic INSTRUMENT, as noted in Mithun (1984, 1997), that is used to carry out the action denoted by the verb, as in (828).

(828) *Tatli:te:lhá e:' tamaqapi'tzite:lhá pantzín.*

ta-tli:-te:lhá	e:'	ta- maqa-pi'tzi -te:lhá	pantzín
3PL.SUB-dance-AMB	and	3PL.SUB- hand-be.divided -AMB	bread

'They go along dancing and distributing bread by hand.'

In (828), the hand-related prefix *maqa-* appears with the root *pi'tzi* 'be divided' deriving a new verb meaning 'to distribute, hand out', where the incorporated body-part term may refer to the part of the body that functions as the semantic INSTRUMENT used in carrying out the activity denoted by the verb root.

BPTs that are incorporated with verb stems show the typical extensions from literal uses to denoting the parts of other objects based on shape or function similarities with the part's etymological origin, as discussed in §3.3.3. The BPTs in these stems convey one of its typical paronymic denotations, as seen in (829)-(831).

(829) *Ma:qalhqé:ka'.*

ma:-qalh-qe:-ka'
 CS-**mouth-uncovered**-IDF:PFV
 Lit. '(The scissors) were mouth-opened.'
 'The scissors were opened.' [FAS: Cut and Break #59]

(830) *Ma:kinkaqué:lh li:tzó'qnu'.*

ma:-kinka-qe:-lh	li:-tzo'q-nu'
CS- nose-uncovered -PFV	INST-write-PL

Lit. 'S/he nose-removed the pen.'
 'S/he took the top off the pen.' [FAS: Cut and Break #22]

(831) *Makxú:lh sé:'qna'.*

mak-xu:-lh	sé:'qna'
body-peel -PFV	banana

Lit. 'S/he peeled the body of the banana.'
 'S/he peeled the banana.' [FAS: Cut and Break #30]

The body-part root *qalh-* 'mouth (interior)' in (829) refers to edges of objects that are attached to its base, such as the blades of the scissors or top of a box, which may be opened and closed while still connected, similar in function to the mouth (cf. *taqalhqé:lh ta-* (INCH))

qalh- ‘mouth’ -*qe:* ‘uncovered’ -*lh* (PFV) ‘She opened her mouth’).³⁷ The causative stem *ma:qalhqé:* may mean ‘A opens X with an attached opening’. In (830), *kinka-* ‘nose’ refers to an object that has a tip or point similar to the shape of the nose. The derived causative stem *ma:kinkaqé:* creates a verb meaning ‘A opens X (with) a point or tip’. In (831), *mak-* ‘body’ commonly refers to the main part or bulky part of an entity; *makxtú:* may mean ‘A peels the skin off the body of X’ and is the conventional way of talking about peeling fruits, such as bananas, mangos, and avocados. The incorporated body-part term denotes the part of the object argument affected by the action of the verb and the possessor of the (literal or figurative) BPT may be introduced as the syntactic object, as seen in (830)-(831).

In many cases, BPTs no longer refer to the domain of the body or one of its typical paronymic denotations but are used in constructions that are figurative and idiomatic, as seen in (832)-(835).

(832) *Tzu'kúka' lakapu'tza'ká'n. Lakapu'tza'ká'n lha:' maktáka'.*

tzu'kú-ka' **laka-pu'tzá'**-ka'n **laka-pu'tzá'**-ka'n
begin-IDF:PFV **face-look.for**-IDF:IMPF **face-look.for**-IDF:IMPF

lha: maktá-ka'
NEG find-IDF:PFV

‘They began to look around for it and look all over for it but they did not find it.’
[SLO: Cuentos 5]

(833) *I'xle:'nku'tumá:'ka'. Pus tonces tzamá: San Manuel ka'tzi:ni:yá. Lakapa:stá'knayá. Qa'lhí: i'xpoder.*

i'x-le:'n-ku'tun-ma:'-ka' pus tonces tzamá: San Manuel
PST-take-DSD-PROG-IDF:PFV well then that San Manuel

ka'tzí:-nin-ya **laka-pa:stá'k**-nan-ya qa'lhí: i'x-poder
know-AP-IMPF **face-remember**-AP-IMPF have 3POSS-power

‘They would have wanted to take it since that San Manuel knows things; he figures things out; he has power.’ [SLO: Cuentos 72]

³⁷ The form without the body-part incorporate *qalh-* was given to express that the top of an object that is not attached to its base was taken off, for example, *ma:qé:lh xá:lu'* (*ma:-* ‘CS’ -*qe:* ‘uncovered’ -*lh* ‘PFV’ *xá:lu'* ‘pot’) ‘She took the top off the pot’ [FAS: Cut and Break #55].

(834) *Tanu:chá naxchik. A'kcha:nte:lhá tanú:lh.*
 ta-nu:-Ø=chá nak=i'x-chík **a'k-cha:'n-te:lha** ta-nu:-lh
 INCH-in-IMPF=DIST LOC=3POSS-house **head-arrive-AMB** INCH-in-PFV
 'She goes into her house; she went walking in very annoyed.'
 [FAS: Woodchopper 21]

(835) *Maqa'túnu i'kpa:stá'ka tu: chu: i'kle:a'qatuyúja.*
 maq-a'túnu i'k-pa:stá'k-a
 NUM.CLF-each 1SG.SUB-remember-IMPF

tu: chu: i'k-li:-**a'qa-tuyúj-a**
 NREL PTCL 1SG.SUB-INST-**ear-worry-IMPF**
 'Sometimes I remember what I worry about.' [RVA: Cuentos 90]

In (832), the transitive verb *pu'tzá'* 'A looks for X' is combined with *laka-* 'face' deriving the verb *lakapu'tzá'* 'A looks around for X'. The root *laka-* in the construction may profile the face in expressing that the looking event occurs in various directions. The root *laka-* 'face' in (833) combines with the verb *pa:sták-* 'A remembers X' forming a new verb *lakapa:stá'k-* 'A figures X out'. In (834), the intransitive verb *cha:'n* 'X arrives' is combined with *a'k-* 'head,' which depicts the top or highest point or limit, which may indicate that the EXPERIENCER reached a point or limit, which in this context, creates a metaphor meaning to 'be fed up, be annoyed'. The example in (835) is similarly highly idiomatic, whereby the BPT *a'qa-* 'ear' may be associated with hearing that represents a metaphorical source of the cognitive process or emotion for worrying (cf. *a'qamín a'qa-* 'ear' *min* 'come' 'A understands'). The figurative uses of BPTs in these examples may reflect what Heine (2014: 27-28) observes as the body-part stem being associated with specific human activities or the culturally-determined center of emotion involved in the cognitive activity.

While most incorporated BPTs do not affect the valency of the verb, as in the examples presented above, some BPT+stem combinations may take an additional syntactic argument and increase the verb's valency. The BPT *pu:-* 'vagina, container,' for example, has this effect with verbs like *tojó:* 'be immersed', as seen by comparing the clause in (836) with the one in (837).

(836) *Naktlamánk tojo:má:' skí:'ti'*
 nak=tlamánk tojó:-ma:' skí:'ti'
 LOC=pot be.immersed-PROG fish
 Lit. 'The fish is immersed in the pot.'
 'The fish is inside the pot.'

(837) *Pu:tojo:má:' chichí' i'xpu:lhtáta'*
 pu:-tojó:-ma:' chichí' i'x-pu:lhtáta'
 vagina-be.immersed-PROG dog 3POSS-bed
 Lit. 'The dog occupies its bed.'
 'The dog is in its bed.' [FAS: TRPS #45]

The intransitive verb *tojó:* 'X is immersed (in a container or liquid)' has a valency of one in (836) where the locative or oblique argument is introduced by the locative clitic *nak=*. The intransitive verb *tojó:* combined with *pu:-* 'vagina, container' becomes transitive, *pu:tojó:* 'X is inside Y,' which adds an object expressing the LOCATION or CONTAINER, *i'xpu:lhtáta* 'its bed' in (837). The POSSESSOR of the part designated by *pu:-* 'vagina, container' is expressed with the object noun phrase *pu:lhtáta* 'bed'.

The root *killh-* 'mouth' increases the valency of the verb in an idiomatic expression in (838).

(838) *Tzu'ku'paláka' li:killhchuya:kán e:' li:killhchuya:kán chi: lha: la xtapalí: xla xmákni'*
 tzu'kú'-pala-ka' li:-**killh-chuyá:**-kan e:'
 begin-RPT-IDF:PFV INST-**mouth-be.crazy**-IDF:IMPF and

 li:-**killh-chuyá:**-kan chi: lha: la i'x-tapalí: xla
 INST-**mouth-be.crazy**-IDF:IMPF PTCL NEG do PST-change PRN.3SG

 i'x-mákni'
 3POSS-body
 'Again they started making fun of him and making fun of him because he could not change his body.' [RLP: Chameleon 35]

In (838), *killh-* 'mouth' increases the valency of the verb *chuyá:* 'X is crazy', deriving a non-compositional verb, *killhchuyá:* meaning 'A verbally makes fun of X' or more literally 'A mouth-crazes X' with the mouth as a metonymic source of the ridiculing utterances. The instrumental *li:-* introduces an applied object expressing the REASON or MOTIVE for the event, deriving the verb stem *li:killhchuyá:* 'A makes fun of X because of Y' (see instrumental applicative §6.1.2.2).

To summarize this section, BPTs incorporated with dynamic verbs are highly productive and serve many different functions. Incorporated body-part terms in these expressions denote literal or paronymic extensions of the body that narrow the event or action denoted by the verb root in applicative-like ways, in that BPTs may change the argument structure of the verb by specifying a semantic PATIENT, INSTRUMENT, or LOCATION of the action. In these constructions, the BPT may be in a part for whole metonymic relation with the possessor of the part. Since the verb may agree with the possessor through inflectional marking on the verb (or noun), this agreement pattern may suggest that the UNDERGOER is more prominent and the BPT serves to specify or narrow the action expressed by the verb. Some BPTs incorporated with verb stems additionally function more like typical applicatives forming a syntactically intransitive verb into a transitive stem, which allows the expression of an additional argument. BPTs commonly appear in constructions that are non-transparent, figurative, and idiomatic, whereby the BPT can no longer be analyzed as expressing paronymic denotations. Body-part terms incorporated with verbs may also be used in narratives to track previously established referents and foreground (or background) entities or participants that have been established in the discourse; while this function of the BPT has been documented in ZT, it still requires further investigation.

In summary, Section 6.1 has presented a number of valency-changing affixes in ZT. These affixes include two causatives and several applicatives, referred to as the dative, instrumental, comitative, and allative. While the causatives and applicatives function to add an event participant that is associated with a prototypical semantic role to the meaning of the underived stem, they all also add participants in unpredictable or idiosyncratic ways as is usual of derivational affixes in general. This section additionally includes some affixes that have valency-decreasing properties and some of which do not alter the syntactic valency of the verb but rather modify the argument structure of verbal predicates by adding a semantic entity or participant. The decausative, for example, with transitive verbs decreases the valency of the verb attributing to it an inceptive or middle-voice-like reading. The alienative is another affix that prototypically does not alter valency, but may add an implied semantic participant to the meaning of the underived verb. Finally, BPTs incorporated with verb stems, in most cases, do not add a syntactic argument to the verb

but may manipulate the event by indicating the involvement of entities that correspond to a semantic PATIENT, LOCATION, or INSTRUMENT or form highly idiosyncratic and conventionalized expressions. The next section presents affixes that modify the verb stem not by adding a syntactic or semantic participant, but by altering the meaning of the stem in adverbial, aspectual, and modal-like manners.

6.2 Adverbial affixes

This section examines verbal affixes that modify the stem but do not alter the number of event participants expressed by the verb. Adverbial verbal affixes do not increase or decrease the syntactic valency of the verb but rather form more specific stems by adding aspectual, spatio-temporal, and adverbial senses. These verbal affixes do not express obligatory or grammatical categories the way inflection does and are fairly easy to recognize in terms of meaning and form. Just like valency-changing affixes, stems with adverbial morphology take regular agreement and TAM marking and show little allomorphy. In other Totonacan grammars, they have been referred to as adverbial derivational affixes (Watters 1988), aspectual derivational morphemes (Kung 2007a, McFarland 2009), and as quasi-inflectional verbal morphology (Beck 2004, 2008b, 2011). The description here follows Watters (1988: 226) in calling them adverbial morphemes since the meanings expressed by these affixes are wider in range than aspectual, although some fall between forming more specific verbs and having some typical inflectional meanings.

Adverbial derivational morphemes modify the event structure of the verbal predicate forming stems with specialized meanings. These affixes are described using similar terminology for the morphemes that are cognate in other Totonacan languages. Adverbial affixes include: the intensifier (INTNS), path (PATH), roundtrip (RT), ambulative (AMB), repetitive (RT), totalitative (TOT), distal (DIST), proximal (PRX), and desiderative (DSD). Many of these adverbial affixes seem to function as markers of ‘Associated Motion’, indicating that the verb encodes information about the direction, orientation, temporal relation or certain aspectual notions correlated with the motion event denoted by the verb

(Guillaume & Kock 2021). A complete list of these affixes can be found in Appendix C. Each of these affixes modify the action or event denoted by the verb by contributing deictic spatial (e.g. distal and proximal), aspectual (e.g. totalitative), modal (e.g. desiderative), or adverbial (e.g. ambulative) senses. These affixes are expressed via prefixes or suffixes that appear closer to the root or stem than inflectional morphology and overlap with valency-changing morphology. Figure 10 presents an idealized ordering of affixes since all categories are not simultaneously overt on the verb form and since there is much semantically and morphologically linked variation in addition to some categories that are underspecified or suppletive. Nevertheless, the proposed order is based on examples from the ZT database. The figure places valency-changing prefixes and adverbial prefixes under the general category of “derivational affixes” since these two types of morphemes overlap in this position. For the suffixes, some examples suggest that the valency-altering suffixes appear closer to the stem than adverbial suffixes, so the division between the two categories is maintained here. Further documentation, however, may reveal different orders of elements. The morphological gloss of the adverbial affixes in Figure 10 have been bolded. The angled brackets <> in the figure represent that these affixes may appear in more than one position. The slots in which derivational and adverbial affixes appear have been shaded.

Tense/Mood	Person	Mood	Person	Reciprocal	Derivational affixes			(BPT +) Root	Valency-changing affixes	Adverbial affixes			Voice	Aspect	Inflection	Adverbial affixes	Voice	Person	Aspect
PST FUT OPT	1SUB 1OBJ	POT	PL.OBJ	3PL.SUB	RCP	<CS> <INST> RT	<INST> CMT <BPT> ALL DCS INCH	<CS> ALN INTNS PATH	CS DAT	<RPT> TOT	DSD	AMB	<IDF>	IMPF PROG PF	ST.PL	<RPT> DIST PROX	<IDF>	1PL.SUB 2SG.SUB 2PL.SUB 2OBJ	PFV

Figure 10: Idealized order of adverbial affixes as integrated with valency-changing affixes in Chapter 6 and inflectional affixes in Chapter 5

Figure 10 suggests that adverbial morphemes are the most diverse in terms of placement, appearing in different parts of the verb. While the template takes into consideration some variable ordering of affixes, there is probably much more variability and idiomacity in the forms and meanings of these affixes than presented here. Nevertheless, the order presented here is based on the examples found in the ZT database. An idealized template was presented in Figure 6 where the valency-changing prefixes and adverbial prefixes were presented as separate categories (see §3.1).

The examples in (839)-(840), for instance, shows that inflectional prefixal morphology appears at the outer edges of the verb, while adverbial and valency-changing prefixes appear closer to the root.

(839) *Kai'ki:taspi'tli'...*
ka-i'k-ki:-ta-spi't-li'
 OPT-1SG.SUB-RT-INCH-turn-PFV
 'May I return...' [RVA: Cuentos 104]

(840) *Wi'x ki:li:pi'na' a'ntzá'.*
 wi'x **ki:-li:-pi'n-a'** a'ntzá'
 PRN.2SG RT-INST-go:2SUB-IMPF:2SG.SUB over.there
 'You take it over there and return.'

The roundtrip (RT) prefix *ki:-* appears on the inchoative stem in (839) and on the instrumental stem in (840) and modifies the entire event by adding a spatio-temporal reading similar to 'go and come back'. The adverbial prefix *te:-* 'PATH' has similar spatio-temporal senses but only appears in examples directly combined with verb roots (see §6.2.2).

Adverbial suffixes generally appear between valency-changing suffixes and inflectional suffixes, as seen in (841)-(843).

(841) *Sqa'qa:'nani'qo:kani:'t.*
 sqa'qa:'nan-**ni'-qo:-kan-ni:'t**
 sweat-DAT-TOT-IDF-PF
 'He had been completely covered in sweat.'

(842) *Choj mat lakpu'tzani'paláka' chi: chu: ...*
 choj mat lak-pu'tza-**ni'-pala-ka'** chi: chu:
 now QTV INTNS-look.for-DAT-RPT-IDF:PFV PTCL PTCL
 'Now they looked for him again...' [SLO: Cuentos]

(843) *Kinán i'kpixtli:te:lhayá:uj.*
 kinán i'k-pixtlí:-**te:lha-ya:-uj**
 PRN.1PL 1SG.SUB-sing-AMB-IMPF-1PL.SUB
 'We go along singing when we go to school.'

The totalitative (TOT) suffix *-qo:* and the repetitive (RPT) suffix *-pala*, for example, appear on dative stems after the dative applicative and before indefinite and aspectual marking in (841)-(842). The ambulative (AMB) suffix *-te:lha* appears before aspectual and person marking, as seen in (843).

However, some adverbial affixes appear after aspectual marking, as seen in (844)-(846).

(844) *Na'ktanu:palaya:chi kinchik.*
 na-i'k-tanú:-**pala-ya:-chi** kin-chik
 FUT-1SG.SUB-enter-RPT-IMPF-PRX 1POSS-house
 'I will go to my house again.' [RVA: Cuentos 107]

(845) *I'ktaxtuma:'nancháuj.*
 i'k-taxtu-**ma:'-nan-cha-uj**
 1SG.SUB-leave-PROG-ST.PL-DIST-1PL.SUB
 'We are going far away.'

(846) *Xla maka'ma:'pá i'xma'qspú:lh nakmakskút.*
 xla maka-a'n-**ma:'-pa** i'x-ma'qspú:lh nak=makskút
 PRN.3SG hand-go-PROG-RPT 3POSS-finger LOC=fire
 'S/he is putting her finger in the fire again.'

The proximal (PRX) *-chi* as in (844) and the distal (DIST) *-cha* as in (845) may add to the meaning of the clause that the state or event occurs far from or close to the speaker. The repetitive (RPT) suffix *-pala*, which expresses the notion that the action is repeated, appears in two different positions: before the imperfective *-ya:* as in (844) and reduced in final position after the progressive *-ma:'* as in (846).

In general, adverbial affixes seem to generally appear closer to the verb root since they tend to modify the meaning of the entire event by adding spatio-temporal, aspectual, and modal senses to the event scene. A brief description of each of these morphemes is presented below with further examples that show the idealized order of the adverbial

affixes in Figure 10. These morphemes include the intensifier prefix *lak-* as described in §6.2.1, the path prefix *te:-* in §6.2.2, the roundtrip prefix *ki:-* in §6.2.3, the ambulative suffix *-te:lha* as in §6.2.4, the repetitive suffix *-pala* as in §6.2.5, the totalitative suffix *-go* as in §6.2.6, the distal *-cha* and proximal *-chi* suffixes as in §6.2.7, and finally the desiderative suffix *-kutun* in §6.2.8. The inchoative prefix *ta-*, which is considered an adverbial derivational morpheme, was described in §5.3.

6.2.1 Intensifier

The intensifier prefix *lak-* does not change the valency of the verb, but rather derives a new stem that expresses the fact that the event described by the verb occurs with greater force or energy, as in (847)-(850).

(847) *Li:sí'tli' li:sí'tni'*.

li:-sí't-li' li:sí'tni'
INST-cut-PFV scissors

‘She cut (the cloth) with the scissors.’ [FAS: Cut and Break, 56]

(848) *Laksi'tli' lúxu'*.

lak-sí't-li' lúxu'
INTNS-cut-PFV cloth

‘He shredded the cloth (with scissors).’ [FAS: Cut and Break, 4]

(849) *Makchu'kú'lh li:wá't.*

mak-chu'kú'-lh li:wá't
body-cut-PFV food

‘She cut through the food (watermelon).’ [FAS: Cut and Break, 14]

(850) *Lakchu'kú'lh skí:'ti'*.

lak-chu'kú'-lh skí:'ti'
INTNS-cut-PFV fish

‘She chopped the fish up.’ [FAS: Cut and Break, 28]

The examples in (847) and (849) contrast the verb stem with the intensified forms in (848) and (850), respectively. The examples were responses to the Cut and Break video clips (Bohnenmeyer, Bowerman, and Brown 2001). The response in (847) was prompted by a video of a woman cutting a piece of cloth in half with scissors, whereas (848) was in response to a man tearing into a piece of cloth with scissors. The example in (849) was

prompted by a clip of a woman cutting a watermelon with a knife, while (850) was in response to a woman chopping the head and tail off a fish. In each of the examples with the intensifier prefix, the meaning of the verb stem becomes intensified similar to the differences between ‘cut’ and ‘cut off/up’ or ‘chop’ in English.

Table 64 illustrates some derived forms with the intensifier *lak-* and their meanings in the database.

Table 64: Intensifier verb stems with *lak-*

Non-derived stems		Intensifier stems	
<i>chi:'</i>	‘A ties X’	<i>lakchi:'</i>	‘A ties X up’
<i>chu'kú</i>	‘A cuts X’	<i>lakchu'kú</i>	‘A chops X up’
<i>ka:'</i>	‘A chops X’	<i>laká:'</i>	‘A chops X up’
<i>ni:</i>	‘A dies’	<i>lakní:</i>	‘A dies of a cause’
<i>si't-</i>	‘A cuts X’	<i>laksi't-</i>	‘A chops X up’
<i>stilh-</i>	‘A distributes X’	<i>lakstilh-</i>	‘A distributes X out’
<i>tu'kx-</i>	‘A breaks X’	<i>laktu'kx-</i>	‘A breaks X to pieces’
<i>pu'x-</i>	‘A breaks X’	<i>lakpu'x-</i>	‘A rips X apart’
<i>xti't-</i>	‘A tears, rips X’	<i>lakxti't-</i>	‘A tears, rips X apart’
<i>xwa'tá</i>	‘A saws X’	<i>lakxwa'tá</i>	‘A saws X into pieces’
<i>pu'tzá</i>	‘A looks for X’	<i>lakpu'tzá</i>	‘A searches X out’
<i>xqa</i>	‘A splits X’	<i>laqxqá</i>	‘A splits, chops X up’
<i>tzanqá:</i>	‘A is lost’	<i>laqtzanqá:</i>	‘A gets lost’
<i>qu'lú'qsa</i>	‘A bends X’	<i>laqu'lú'qsa</i>	‘A curls X up’

Table 64 shows the intensifier prefix *lak-* has an allomorph *laq-* in verb stems that contain uvular consonants, such as *laqxqá* ‘A splits X up’, *laqu'lú'qsa* ‘A curls X up, and *laqtzanqá:* ‘A gets lost’, the latter which is illustrated in (851).

(851) *Xtalaqtzanqa:te:lhá. Xtalaqtzanqa:te:lhá. Wa'chi' wa'chi' wa'chi' xtalaqtzanqá:.*
 i'x-ta-**laq**-tzanqá:-te:lha-Ø i'x-ta-**laq**-tzanqá:-te:lha-Ø
 PST-3SG.SUB-INTNS-be.lost-AMB-IMPF PST-3SG.SUB-INTNS-be.lost-AMB-IMPF

wa'chí' wa'chí' wa'chí' i'x-ta-**laq**-tzanqá:-Ø
 like.this like.this like.this PST-3SG.SUB-INTNS-be.lost-IMPF

‘(The cows) used to go walking along getting lost (in the distance). They used to go along getting lost (in the distance). Like that, they got lost (in the distance).’ [SLO: Cuentos 3]

The intensifier (INTNS) prefix *laq-* in (851) may add to the meaning of the stem *tzanqá:* ‘A is lost’ an active or more dynamic sense, *laqtzanqá:* ‘A gets lost’, which also appears with the ambulative *-te:lha* (AMB) expressing that the event denoted by the verb occurs during motion.

The intensifier prefix *lak-/laq-* may also appear in highly lexicalized or idiosyncratic constructions, as in (852).

(852) *Lakní:.*
lak-ni:
 INTNS-die
 ‘S/he dies (of an unpleasant cause)’

The intransitive root *ni:* ‘A dies’ takes the intensifier *lak-* and forms a relatively idiomatic verb meaning to die from an unfortunate or unpleasant circumstances.

The cognate prefix in other Totonacan languages has also been described as the “distributive,” indicating that the action is applied to multiple entities (Filomeno Mata Totonac: McFarland (2009), Huehuetla Tepehua: Kung (2007a), Upper Necaxa Totonac: Beck (2004), Misantla: McKay (1999), Coatepec Totonac: McQuown (1990)). In Upper Necaxa, Beck (2004: 81) describes the prefix as having a range of meanings that are highly lexicalized.

6.2.2 Path

The path (PATH) prefix *te:-* signals the fact that the participant(s) perform the action or event designated by the verb on the way to another location, as in (853)-(854).

(853) *Te:maqá:lh qantín kí'wi' naktéj lha: laktaxtú Maria.*

te:–maqá:n–lh qan–tin kí'wi' nak=tej
PATH–drop–PFV NUM.CLF–one stick LOC=path

lha: la'q–taxtú Maria
 where ALL–leave Maria

‘He passed by and dropped a stick on the road where Maria comes out.’ [FAS: Woodchopper 17]

(854) *Te:lhawáka' nakSan Pedro nakChicontla nakPatla.*

te:–lhawá–ka' nak=San Pedro nak=Chicontla nak=Patla
PATH–make–IDF:PFV LOC=San Pedro LOC=Chicontla LOC=Patla

‘They made (them) while in passing through San Pedro, Chicontla, and Patla.’
 [SLO Cuentos 132]

In the excerpt from the Woodchopper in (853), the woodchopper goes out at night to chop wood for the fire and while on the way back home, he drops a log on the path over which later his wife would trip and fall in the water. In the personal narrative in (854), the speaker tells of how churches were constructed in three other communities before one was finally constructed in the town of Zihuateutla. The cognate suffix is referred to as ‘path’ or ‘in passing’ in Filomeno Mata (McFarland 2009) and Upper Necaxa Totonac (Beck 2004, 2011a).

6.2.3 Roundtrip

The roundtrip (RT) prefix *ki:-* expresses the notion that the subject of the clause goes to perform an action and returns to the point of origin, as in (855)-(857). The roundtrip prefix may induce a motion reading with non-motion verbs attributing the sense of “go do something and return”.

(855) *I'ki:láuj i'kti'yayá:uj kí'wi'.*

i'k–**ki:**–la–uj–Ø i'k–ti'yá–ya:–uj kí'wi'
 1SG.SUB–**RT**–do–1PL.SUB–PFV 1SG.SUB–grab–IMPF–1PL.SUB tree
 ‘We_{EXC} went to get wood (and return).’

(856) *Taxtúli sqá'ta' ki:ti'yálh i'xchichí'.*

taxtú–lh=i sqá'ta' **ki:**–ti'yá–lh i'x–chichí'
 leave–PFV=JUNCT child **RT**–grab–PFV 3POSS–dog

‘The boy left and grabbed his dog (and brought it back up).’ [FAS: Frog story 13]

(857) *Tu: cha:n ki:tamá:wa' wani'paláx qo:lú'.*

tu: cha:≡n ki:-tamá:wa'-Ø wan-ni'-pala i'x-qo:lú'
 PTCL PTCL≡JUNCT RT-buy:2SG.SUB-PFV say-DAT-RPT 3POSS-husband
 'What did you go out and buy?' her husband said to her again.' [FAS: Shopping List
 20]

The example in (855) was a formally elicited example. In elicited expressions where the subject(s) did not return to the point of origin, the roundtrip prefix was dropped (e.g. *i'ka'ni:'táuj i'kti'yayá:uj kí'wi'* 'We have gone to get wood (but didn't return)'). The example in (856) is an excerpt from the Frog Story, where after the boy's dog falls from the window, the boy grabs his dog and brings it back up from where it had fallen. Finally, in the excerpt from the Shopping List narrative in (857), the husband asks his wife what she went to go buy; the prefix *ki:-* adds the sense of 'go and come back' to the meaning of the verb stem.

The prefix that is cognate with *ki:-* in other Totonacan languages is called "roundtrip" in Upper Necaxa Totonac (Beck 2004), Huehuetla Tepehua (Kung 2007a), and Filomeno Mata Totonac (McFarland 2009).³⁸ Other prefixes that appear to be cognate have been labeled the "regressive" in Coatepec Totonac (McQuown 1990), and as "return" in Tlachichilco Tepehua (Watters 1988). In Huehuetla Tepehua, the roundtrip morpheme is restricted to certain lexical verbs, aspects, and tenses (Kung 2007a: 289-290). In Upper Necaxa Totonac, the roundtrip prefix has been described as in the process of being grammaticalized as a completive marker (Beck 2004: 77).

6.2.4 Ambulative

The ambulative (AMB) suffix *-te:lha* expresses the fact that the event signalled by the main verb happens during motion, as shown in (858)-(860).

³⁸ The roundtrip affix was originally termed "roundtrip" in Tepetotutla Chinantec in Westley (1991).

(858) *Xtalaqtzanqa:te:lhá. Xtalaqtzanqa:te:lhá. Wa'chi' wa'chi' wa'chi' xtalaqtzanqá:.*
 i'x-ta-laq-tzanqá:-**te:lha**-Ø i'x-ta-laq-tzanqá:-**te:lha**-Ø
 PST-3SG.SUB-INTNS-be.lost-**AMB**-IMPF PST-3SG.SUB-INTNS-be.lost-**AMB**-IMPF

wa'chí' wa'chí' wa'chí' i'x-ta-laq-tzanqá:-Ø
 like.this like.this like.this PST-3SG.SUB-INTNS-be.lost-IMPF

‘(The cows) used to go along getting lost. They used to go along getting lost. Like that, they got lost.’ [SLO: Cuentos 3]

(859) *Tanu:chá nai'xchik a'kcha:'nte:lhá tanú:lh.*
 ta-nu:-Ø-cha nak=i'x-chik a'kchá:'n-**te:lha**-Ø ta-nu:-lh
 INCH-in-IMPF-DIST LOC=3POSS-house have.enough-**AMB**-IMPF INCH-in-PFV
 ‘She goes into her house and goes along very annoyed.’ [FAS: Woodchopper 21]

(860) *Kinán i'kpixtli:te:lhayá:uj i'kama:'náuj nakpu:qalhtawá'ka'.*
 kinán i'k-pix-tli:-**te:lha**-ya:-uj
 PRN.1PL 1SG.SUB-neck-dance-**AMB**-IMPF-1PL.SUB

i'k-a'n-ma:'-nan-uj nak=pu:-qalhtawá'ka'
 1SG.SUB-go-PROG-ST.PL-1PL.SUB LOC=CNTR-read:DVB

‘We go along singing when we go to school.’

The ambulative suffix modifies the verb stem by adding a notion that the event denoted by the verb occurs while the event participant(s), expressed by the subject in (858)-(860), were walking or moving along a path.

One example shows the ambulative suffix appears after the desiderative suffix *-kutun*, as in (861).

(861) *Nai'kwá tu: chu: i'kwa'kutunte:lhá.*
 na-i'k-wa-Ø tu: chu: i'k-wa'-**kutun-te:lha**-Ø
 FUT-1SG.SUB-eat-IMPF NREL PTCL 1SG.SUB-eat-**DSD-AMB**-IMPF
 ‘I will eat what I want to continue eating.’ [RVA: Cuentos 108]

The example in (861) indicates that the ambulative adds the sense of continuing to do something over time, rather than while walking or moving along a physical path. The cognate suffix in the other Totonacan languages is also referred to as the ambulative in Huehuetla Tepehua (Kung 2007a), Filomeno Mata Totonac (McFarland 2009), and Upper Necaxa Totonac (Beck 2011a).

6.2.5 Repetitive

The repetitive (RPT) suffix *-pala* expresses the repetition of the action denoted by the verb, as in (862). The suffix seems to indicate that the action or event occurs once again.

- (862) *Tlu:palálh i'xtatzó'qni'*
 tlu:–**pala**–lh i'x–tatzó'qni'
 do–RPT–PFV 3POSS–homework
 'She did her homework again.'

The verb stem *tlu*: 'A does X' in (862) is modified by the suffix *-pala*, which adds to the meaning of the expression that the action happens again, 'A does X again'.

The repetitive suffix *-pala* has two forms. The full form of the affix appears when followed by inflectional suffixes, as in (862) above and as in (863)-(864).

- (863) *Kale:'npaláuj chu:wáj mat wankán.*
 ka–le:'n–**pala**–uj–Ø chu:wáj mat wan–kan
 OPT–take–RPT–1PL.SUB–PFV now QTV say–IDF
 'They say, now let's take him again.' [SLO: Cuentos 78]

- (864) *Chi: a'ntzá' chu: wa'chí' li:kilhchuya:paláka'.*
 chi: a'ntzá' chu: wa'chí' li:–kilh–chuyá:–**pala**–ka'
 PTCL over.there PTCL like.this INST–mouth–crazy–RPT–IDF:PFV
 'And over there, like that, he was made fun of again.' [RLP: Chameleon 50]

The full form of the suffix *-pala* appears immediately preceding the first-person plural subject marker *-uj* in (863), and the perfective form of the indefinite voice suffix *-ka'* in (864). The full form of the suffix is also found in verb forms in the imperfective aspect, in final position, as in (865).

- (865) *A:'tzá' naktiyapalá tu: chu: i'kwa'kutún.*
 a:'tzá' na–i'k–tiyá–**pala**–Ø tu: chu: i'k–wa'–kutun
 here FUT–1SG.SUB–grab–RPT–IMPF NREL PTCL 1SG.SUB–eat–DSD
 'Here I will grab again what I want to eat.' [RVA: Cuentos 106]

However, this suffix has as a reduced form *-pa* that is found in final position, in verb forms with a default imperfective reading, as in (866)-(867), and in the progressive aspect, as in (868).

(866) *Choj a'ntzá' wa'chí'n pa:tle'qe:pá.*

choj a'ntzá' wa'chí'n pa:tle'qé:–**pa**–Ø
 now over.there seem=JUNCT happen–RPT–IMPF
 ‘Now, over there, it happened again.’ [RLP: Chameleon 26]

(867) *Chu:wáj taspi'tpá cha:'mpá na'xchík.*

chu:wáj ta–spi't–**pa**–Ø cha:'n–**pa**–Ø nak=i'x–chik
 now DCS–turn–RPT–IMPF arrive.there–RPT–PFV LOC=3POSS–PST–house
 ‘Now she returned and arrived at her house again.’ [FAS: Shopping list 10]

(868) *Xla maka'ma:'pá i'xma'qspú:lh nakmaksút.*

xla maka–a'n–ma:'–**pa** i'x–ma'qspú:lh nak=maksút
 PRN.3SG hand–go–PROG–RPT 3POSS–finger LOC=fire
 ‘She is putting her finger in the fire again.’

The examples in (866)-(868) show that the repetitive suffix *-pala* has as an allomorph *-pa* with certain verb forms. The examples also illustrate that the suffix, at least in these examples, conveys a single repetition of the situation or event denoted by the verb.

The repetitive *-pala* co-occurs with the proximal suffix in (869) and with the desiderative suffix in (870).

(869) *Na'ktanu:palaya:chí kinchík.*

na–i'k–tanú:–**pala**–ya:–**chi** kin–chik
 FUT–1SG.SUB–enter–RPT–IMPF–PRX 1POSS–house
 ‘I will go to my house again.’ [RVA: Cuentos 107]

(870) *Choj ti: cha:'xpalaka'tzá' ti: cha:'xpalaxkutunka'tzá'...*

choj ti: cha:'x–pala–ka'=tzá' ti: cha:'x–**pala**–**kutun**–ka'=tza'
 now HREL carry–RPT–IDF:PFV=now HREL carry–RPT–DSD–IDF:PFV=now
 ‘Now, they had already carried him; they wanted to carry him again.’
 ‘Now, those who carried him, those who wanted to carry him again...’ [SLO: Cuentos 79]

The repetitive marker appears closer to the verb stem than the other suffixes in (869)-(870). In each of these examples, the repetitive seems to add the sense of an action being repeated similar to the adverb “again” in English.

The cognate suffix in other Totonacan languages has been referred to as “again” in Tlachichilco Tepehua (Watters 1988), “reiterative” in Coatepec Totonac (McQuown 1990), “iterative” in Filomeno Mata Totonac (McFarland 2009), and “repetitive” in Zapotitlán (Aschmann and Wonderly 1952), Huehuetla Tepehua (Kung 2007a), and Upper

Necaxa Totonac (Beck 2004 & 2011). Additionally, in Upper Necaxa Totonac (Beck 2011: 39) and Huehuetla Tepehua (Kung 2007a: 294), the full form of the repetitive suffix is found in verb forms in the imperfective and perfect aspects, while the reduced form occurs with the perfective and progressive. In ZT, however, the full form of the repetitive marker is found in forms preceding other suffixes and in the imperfective aspect while the reduced form also appears in final position in the imperfective and progressive aspects.

6.2.6 Totalitative

The totalitative suffix *-qo:* expresses the fact that all of the event participants took part in the event or situation expressed by the verb stem, as in (871)-(873).³⁹

(871) *Tzamá: misín tatatampu:xtoqó:lh.*

tzamá: misín ta-ta-tampu:-xtu-**qo:**-lh
 that animal 3PL.SUB-INCH-bottom-out-TOT-PFV
 ‘All the animals went far away.’ [MCC: Llorona 7]

(872) *Xatzé ma:x a'ntzá' natatu:staqo:yá:uj porque wi: xka:n.*

xatzé ma:x a'ntzá' na-tatu:sta-**qo:**-ya:-uj
 better.that probably over.there FUT-go.up-TOT-IMPF-1PL.SUB

porque wi: xka:n
 because sit water

‘It would probably be better for all of us to go up over there because there is water.’
 [SLO: Cuentos 114]

(873) *Pi'n kulá:ntu' sawát ka:kán sandía melón nípxi' tachá'ni' i'xa'nanqó:.*

pi'n kulá:ntu' sawát ka:kán sandía melón nípxi'
 chili cilantro quelite papalo watermelon melon squash

tachá'ni' i'x-a'nán-**qo:**-Ø
 pumpkin PST-exist-TOT-IMPF

‘There was everything: chili, cilantro, quelite, papalo, watermelon, melon, pumpkin, and chayotes.’ [RVA: Cuentos 30]

The totalitative suffix on the intransitive stems in (871)-(873) indicates that all the members of the group expressed by the subject of the clause take part in the state or event denoted

³⁹ Totalitative stems in ZT may resemble what has been referred to in the typological literature as pluractional verb stems, which encode that the action affects or involves a plurality of participants, occurs distributively or in several places (Newman 2012).

by the verb.

With transitive verb stems, the totalitative specifies that all the event participants expressed by the object partake in the event, as seen in the example in (874).

(874) *Pu'tzaqo:kani:'tzá' talhpáni tu: xli:tlawá'ka' mat.*

pu'tza-**qo**:-kan-ni:'t=tzá' talhpán≡i tu: i'x-li:-tlawá'-ka' mat
look.for-TOT-IDF-PF=now rock≡JUNCT NREL PST-INST-make-IDF:PFV QTV
'They had already looked for all the rocks that were going to be used to make (the church).' [SLO: 99]

The totalitative suffix in (874) takes scope over the object with the transitive verb *pu'tzá* 'A looks for X' indicating that all of the rocks necessary to build the church were collected. Further elicitation could shed light on whether the suffix may take scope over the subject or the object with transitive verbs, however, this was not explicitly tested for in ZT.

The totalitative marker may also be used ambiguously in (875)-(876), where it may indicate that either the participants were completely affected or that the state or process denoted by the verb was completed.

(875) *Saqáqa tawanqó:lh xlaká'ni xmakni'ká'n.*

saqáqa ta-wan-**qo**:-lh xlaká'n≡i i'x-makni'-ka'n
white 3PL.SUB-be-TOT-PFV PRN.3PL≡JUNCT 3POSS-body-PL.POSS
'They were white all over their bodies. / They were completely white on their bodies.'
[RLP: Chameleon 28]

(876) *Se'qét wa'chi' lhkaya:'wá'j talaqó:lh xlaká'n.*

se'qét wa'chi' lhkaya:'wá'j ta-la-**qo**:-lh xlaká'n
grass like.this dark.green 3PL.SUB-do-TOT-PFV PRN.3PL
'Like that, they were totally green like the pasture.' [RLP: Chameleon 44]

The event participants, the chameleons within the context in (875)-(876), successfully changed the color of their bodies signaled by the totalitative, which may indicate that either the change-of-state was completed or that their bodies were completely affected by the event.

The suffix *-qo*: is also used to convey that the action denoted by the verb is performed exhaustively, as in (877).

(877) *Pu'tzaqó:li nai'xtatu:nú:t.*

pu'tza-**qo**:-lh=i nak=i'x-tatu:nú:t
look.for-TOT-PFV≡JUNCT LOC=3POSS-shoe

'He completely looked for (his frog) in his shoe.' [FAS: Frog story 8]

Within the context in (877), the boy looks inside his shoe and turns it upside down to make certain that nothing is inside; the totalitative expresses the idea that the boy thoroughly looked through his shoe.

The cognate morpheme of the ZT totalitative suffix in the Totonacan literature has been referred to as the “terminative” in Coatepec Totonac (McQuown 1990) and Filomeno Mata Totonac (McFarland 2009). In Tlachichilco Tepehua (Watters 1988) and Misantla Totonac (MacKay 1999), the suffix is described as the “completive”. In Huehuetla Tepehua (Kung 2007a), it is referred to as ‘all’, and in Upper Necaxa (Beck 2004 & 2011a) and Filomeno Mata Totonac (McFarland 2009), as “totalitative”. The cognate suffix in the Sierra languages has grammaticalized as a general plural-participant marker (MacKay & Trechsel 2018a,b), but still has some totalitive and terminative uses (Beck, p.c.).

6.2.7 Deictic affixes

Two deictic morphemes in ZT appear mostly on motion verbs and other stems and seem to express that the place of the event occurs far from or close to a deictic center, or the speaker. These two morphemes are the distal *-cha* and proximal *-chi* suffixes, both of which are found throughout the Totonacan language family.. The suffixes *-cha* and *-chi* seem to be historically related to the verbs *cha:n* ‘arrive there’ and *chin* ‘arrive here’ (Beck 2004, Kung 2007a), which may have grammaticalized into distal and proximal suffixes in the synchronic grammar. Table 65 illustrates the distal forms of the verb *taxtú* ‘leave’ for all persons in the imperfective, perfective, progressive, and perfect aspects.

idiosyncratic in form.

The distal suffix *-cha* expresses the fact that the event occurrence seems to be distant in location to the speaker, or the subject of the clause, as in the motion events in (880)-(885).

(880) *Qoschá mónqxu' lha: i'xwa'ká' nai'xchik.*

qos-**cha**-Ø mónqxu' lha: i'x-wa'ká' nak=i'x-chik
fly-DIST-PFV owl where PST- be.high.up LOC=3POSS-house
'The owl flew to where its house was up high.' [FAS: Frog Story 25]

On the intransitive verb *qos-* 'A flies' in (880), the distal expresses the fact that the motion event takes place in a direction away from the speaker.

In (881), it is the SOURCE location of the event situation that is distal.

(881) *Mini:'tanchá statankán.*

min-ni:'tan-**cha** statankán
come-PF-DIST down.below
'It had come from way below.' [SLO: Cuentos 131]

With the intransitive motion verb *min* 'A comes' in (881), the distal suffix *-cha* expresses the fact that the subject's point of origin is located at a distance from the speaker and ambiguously in a direction toward or away from the deictic center.

Other motion verbs, such as *come*, *enter*, and *leave*, readily combine with *-chi* as is found in (882)-(884).

(882) *Ma:n taki:lakaminchi.*

ma:n ta-ki:-laka-min-**chi**-Ø
only 3PL.SUB-RT-face-come-PRX-PFV
'They only came to look around and returned.'

(883) *Na'ktanu:palaya:chí' kinchik.*

na-i'k-tanú:-pala-ya:-**chi** kin-chik
FUT-1SG.SUB-enter-RPT-IMPF-PRX 1POSS-house
'I will go to my house again.' [RVA: Cuentos 107]

(884) *Taxtuchí sakáj maqe:'qlhálh sqá'ta'.*

taxtu-**chi**-Ø sakáj maqe:'qlhá-lh sqá'ta'
leave-PRX-PFV gopher scare-PFV child
'The gopher came out and scared the boy.' [FAS: Frog story 19]

The suffix *-chi* expresses motion towards a deictic center, namely the speaker’s position in (882), the speaker’s home in (883), and the object, *sqá'ta'* ‘child’ in (884). The example in (883) demonstrates that the proximal *-chi* is found with the imperfective aspectual suffix *-(y)a:* in first-person singular forms, which are normally marked by zero morpheme. In (882) and (884), the proximal does not appear with the perfective suffix in the third-person singular and plural form, which is overtly marked in the absence of the suffix. These contextualized examples support the morphological patterns that were described for the imperfective and perfective paradigms shown in Table 65.

The distal is suffixed to a non-motion verb stem, as seen in (885) with the verb *pa:tzanqá:* ‘A forgets X’. In the context of this narrative, the suffix might refer to the relative location of the object that is forgotten.

(885) *I'kpa:tzanqa:chá lha: tojo:kán nakputláuj wa: qalhti:nín puská:t.*
 i'k-pa:tzanqá:–**cha**–Ø lha: tojó:–kan nak=putláuj
 1SG.SUB–forget–**DIST**–PFV where be.inside–IDF:IMPF LOC=bus

wa: qalhtí:–nín puská:t
 over.here respond–AP woman
 ‘I forgot it on the bus, says the woman.’ [FAS: Shopping List 8]

The location of the object of the forgetting event, in this case, would be inside the bus, referred to by the relative clause and the *nak=* phrase. This is the only non-motion verb in the ZT database with a deictic suffix. A larger corpus of verbs with these suffixes in contextualized examples is necessary to better describe these elements since they are deictic and therefore depend on how the events unravel in the speaker’s mind and perspective.

6.2.8 Desiderative

The desiderative (DSD) suffix *-kutun* expresses the idea that the subject desires the realization of the event denoted by the verb. The desiderative suffix differs from the optative mood, which also expresses a speaker’s desires, in that the optative is an inflectional morpheme that has other functions such as expressing (negative) commands and exhortations. The desiderative, on the other hand, is consistently used to indicate that

the speaker desires a certain occurrence or outcome, as illustrated in (886)-(887).

(886) *Chu:wáj tze: nalaksáka' ti: ya: chi'xkú' ta:'tulakutúna'.*

chu:wáj tze: na-laksák-a'
now good FUT-choose-IMPF:2SG.SUB

ti: ya: chi'xkú' ta:'-tulá-kutun-a'
HREL PTCL man CMT-sit-DSD-IMPF:2SG.SUB
'Now you can choose well which man you want to marry.'

(887) *Sa: sqo'lukutúna' kapi'nchi' nakpu:tánti'.*

sa: sqo'lú-kutun-a' ka-pi'n-chi' nak=pu:tánti'
if urinate-DSD-IMPF:2SG.SUB OPT-go:2SG.SUB-DIST:2SG.SUB LOC=toilet
'If you want to pee, go to the bathroom!'

The verb stems *ta:'tulá* 'A marries X' in (886) and *sqo'lú* 'A urinates' in (887) take the desiderative suffix, which indicates that the subject desires to accomplish the action or event expressed by the verb stem.

The examples in (886)-(887) above all take human subjects; however, the subject of verb stems with the desiderative suffix may also be non-human animates, as in (888).

(888) *Kit i'kmaqni:lh chichi' tu: i'xkakutún sqá'ta'.*

kit i'k-maqni:-lh chichi' tu: i'x-xka-kutun-Ø sqá'ta'
PRN.1SG 1SG.SUB-kill-PFV dog NREL PST-bite-DSD-IMPF boy
'I killed the dog that wanted to bite the boy.'

In (888), the object of the main verb *maqni:* 'A kills X' is *chichi'* 'dog,' which is the subject of the subordinated verb *xka* 'A bites X' with the desiderative suffix, which expresses the idea that the dog desires the realization of the action expressed by the verb. Whether the desiderative suffix may appear in verb forms that take an inanimate subject requires some elicitation as this was not tested.

Two examples show the positioning of the desiderative suffix in comparison to other adverbial suffixes, such as the repetitive *-pala* in (889), and the ambulative *-te:lha* in (890).

(889) *Choj ti: cha:xpalaka'tzá' ti: chaxpalaxkutunka'tzá'.*

choj ti: cha:x-pala-ka'=tzá' ti: chax-pala-kutun-ka'=tza'
now HREL carry-RPT-IDF:PFV=now HREL carry-RPT-DSD-IDF:PFV=now
'Now they_{IDF} had already carried him; they_{IDF} wanted to carry him again.' [SLO: Cuentos 79]

(890) *Nai'kwá tu: chu: i'kwa'kutunte:lhá.*

na-i'k-wa-Ø tu: chu: i'k-wa'-**kutun-te:lha**-Ø
FUT-1SG.SUB-eat-IMPF NREL PTCL 1SG.SUB-eat-**DSD-AMB**-IMPF
'I will eat what I want to continue eating.' [RVA: Cuentos 108]

The transitive root *chax-* 'A carries X' in (889) takes the repetitive and desiderative suffixes expressing that the subject desires the realization of the event expressed by the verb again. The transitive root *wa'* 'A eats X' with the desiderative and ambulative suffixes in (890) means that the subject desires to continue realizing the event expressed by the verb. This order of affixes is reflected in Figure 10.

The suffix that is proposed to be cognate with *-kutun* in other Totonacan languages is also referred to as the “desiderative” in other Totonacan languages (Tlachichilco Tepehua: Watters 1988, Huehuetla Tepehua: Kung 2007a, Ozelonacaxtla Totonac: Román Lobato 2008, Upper Necaxa Totonac: Beck 2004, 2011a; Filomeno Mata Totonac: McFarland 2009). In Filomeno Mata, the desiderative suffix is described as a mood (McFarland 2009: 142), while in other Totonacan languages the suffix has been described as an adverbial or aspectual suffix (Watters 1988, Kung 2007a, McFarland 2009).

In summary, this section presents a number of adverbial affixes that form more specific stems in ZT by adding spatio-temporal, aspectual, or modal senses but do not express obligatory grammatical categories. Adverbial affixes modify the event expressed by the verb and manipulate the argument structure without adding or removing participants. These affixes include the inchoative, intensifier, repetitive, totalitative, distal and proximal, ambulative, path, roundtrip, and desiderative. While some suppletive allomorphy and paradigmatic idiosyncrasy is attested for the distal and proximal suffixes, these affixes tend to show less allomorphy and idiosyncrasies in form. Since these affixes are adverbial, they seem to appear in various positions of the verb stem and show variable ordering of affixes which is not well-understood. Furthermore, it is important to note that verb roots and stems also combine with other verbs forming a range of compound verbs that are not formally described in this chapter, although verb compounds involving stative and postural bases were described in §5.3.2.

To summarize Chapter 6, ZT has an unusually large number of derivational morphemes

that combine with verb stems and with each other to form more specific, and in some cases, more complex predicates. Affixes categorized as derivational are overt and more stable in form showing comparatively little allomorphy than inflectional morphology covered in Chapter 5. The derivational morphemes have been divided into those affixes that alter the event structure of the verb by adding or removing event participants and those that form more specific verbs by modifying the stem in a manner similar to adverbs. Some affixes that are considered valency-changing in this description do not fall neatly into this category however. These morphemes include the alienative and incorporated body-part roots since these derivational elements directly combine with verb roots and may introduce semantic entities involved in the meaning of the verb stem without increasing syntactic valency, with some exception.

ZT also features a large number of derivational affixes that do not change the syntactic valency of the verb but rather modify the action or event in spatial-temporal, aspectual, and modal-like ways; some of these adverbial morphemes also frequently co-occur or combine directly with the root, particularly the inchoative and intensifier prefixes. Adverbial morphemes appear in various parts of the stem expressing fine-grained spatio-temporal, aspectual, and modal distinctions which are typically associated with inflection, however, as opposed to inflection, these affixes are not obligatorily expressed and form verbs with specialized meanings. These affixes exhibit properties that are considered to be lexical and grammatical reflecting that the distinction between inflection and derivation is better thought of as a continuum. Furthermore, while the verb has been analyzed as completely analytical in which the verb word consists of distinct morphemes that contribute a layer of meaning to the whole, much of the data presented has been described as formally or functionally idiosyncratic to some degree suggesting these forms are better described lexically since these constructions are learned or memorized as units by the language learner.

7 Conclusion

Zihuateutla Totonac is a language spoken in the highlands of the Sierra mountains in Puebla State Mexico, where other communities that speak different Totonacan and Nahuatl varieties reside. This description of the morphology of ZT provides a resource for comparative studies of languages spoken in this region. One of the goals of documenting ZT at the onset of this project was to gain a better understanding on how the language fits within the Totonacan family. While this area requires further work, the project so far indicates that Zihuateutla Totonac is part of the Northern branch of the family and where lexical isoglosses suggest a closer link with Upper Necaxa Totonac than Apapantilla — in contrast to the classification suggested in *Ethnologue* (Eberhard, Simons, and Fennig 2020). A description of the morphology of ZT provides a source for typological studies on which linguistic theories are based and which give us insight into the possible diversity of language structures. This chapter concludes with a summary of some of the most important findings in this dissertation and some key features of interest to comparative studies of Mesoamerican languages and languages around the world. The chapter ends with a brief note on some of the limitations of this study and possibilities for future research.

7.1 Summary of Research and Typological Generalizations

Zihuateutla Totonac is one of hundreds of languages spoken in the Mesoamerican region, which consists of roughly 140 languages that have been classified into ten language families (Campbell 2016).⁴⁰ A grammatical description of ZT contributes to the empirical base for research on these languages. This description has taken a form-based approach to the linguistic analysis where word forms were described as completely analytical and analyzable. An analytical and typologically accessible approach to the linguistic

⁴⁰ In Campbell (2016), the Mesoamerican linguistic area is classified into ten language families: Mayan, Mixe-Zoquean, Tequistlatecan, Totonacan, Otomanguean, Uto-Aztecan, Xinkan, Cuitlatec, Huave, and Tarascan; the last three of these languages — Cuitlatec, Huave, and Tarascan — are considered to be linguistic isolates.

description may be useful for cross-linguistic comparative studies. This section summarizes some of the linguistic properties of ZT and contextualizes them within a more typological perspective particularly in relation to linguistic characteristics of the Mesoamerican area at large. A table summarizing the linguistic features that ZT has in common with the Mesoamerican linguistic area can be found in Appendix D.

Chapter 2 on phonology has illustrated the sound system of Zihuateutla Totonac. ZT has a relatively large vowel inventory making a typologically-rare distinction in length and laryngealization that is typical of the Totonacan languages. The vowel inventory includes five vowel qualities which is characteristic of the Northern branch of the family (see §2.1.2). In terms of the consonant inventory, ZT has a series of voiceless stops, affricates, and fricatives, and some relatively unusual obstruents, such as a uvular stop, lateral fricative, and lateral affricate (see §2.1.1). The lack of contrastive voiced obstruents is a common phonological property of consonants in the Mesoamerican area (Campbell et al. 1986). In addition, languages in this area are known for having a series of glottalized consonants (Campbell 2013, Maddieson 2013), which is also typical of the Tepehua branch of Totonacan but lacking in ZT. Zihuateutla Totonac may also demonstrate vowel and consonant harmony across morpheme boundaries with the addition of particular affixes, which is a property shared by few languages in the area (Campbell et al. 1986). A regular and predictable stress pattern in addition to certain phonological features at phrase-final positions are all characteristic of Mesoamerican languages (Campbell et al. 1986, Campbell 2013).

Chapter 3 has presented an overview of nouns, verbs, and other lexical and grammatical subclasses in ZT. While these areas all require further study, a number of typologically interesting points can be made. The structure of the noun phrase, for instance, is fairly rigid with modifiers generally preceding the noun (see §3.1 and §4.1). The order of words and clausal constituents, on the other hand, is flexible — the most common order being verb- or predicate-initial (see 3.2.1). This preference for the verb to appear in initial (or at least non-final) positions is a linguistic trait of Mesoamerican languages (Campbell 2013). Non-verbal predicates, also referred to as a zero copula construction in this dissertation for ZT (see §3.2.2), is also prominent in languages of this area (Stassen 2013). Another common typological feature is the use of pronominal elements and interrogative particles to form

information questions (Haspelmath 2013), although in ZT these pronouns also form a heterosemous set with particles that introduce subordinate clauses (cf. §3.4.5 and §3.5). ZT makes use of subordinators that appear at the left-most edge of the clause like many other Mesoamerican languages (Dryer 2013).

Lexical classes in ZT include adjectives, adverbs, and several other grammatical subclasses. Adjectives and adverbs were both described as a semantically wide and diverse lexical class (see §3.3.1). Despite other scholars describing Totonacan as lacking a formal class of adjectives, these nominal modifiers in ZT are here described as an open class that express a wide range of “property concepts” (Thompson 1988). Adjectives are found in noun phrases and copula clauses and can function as a verbal argument when prefixed with the determinative, thereby rendering them as nominals. Adjectives may take an optional plural marker in combination with a semantically plural noun. While many adjectives in the database are underived, they may be formed with the deverbalizer (see §3.3.1.3), a morpheme that is also found on deverbal nouns, or the “semblative” suffix, which forms adjectives from nouns, adverbs, or other adjectives (see §3.3.1.4). In addition to conveying typical adverbial senses, such as space, time, and manner, adverbs also express property concepts similar to adjectives and include a subclass of ideophones and deictic adverbs (see §3.3.2). Ideophonic adverbs are common cross-linguistically and are often represented iconically by some unusual morphophonological properties. In ZT, ideophones are distinguished by reduplicative phonology and sound symbolic patterns (specific consonant and vowel combinations) that have been conventionally associated with certain types of meanings or events (see §3.3.2.1). Another subclass of adverbs express degrees of spatial and temporal deixis and are widespread (see §3.3.2.2).

Body-part terms are an important lexical subclass in ZT and in the MA area in general. Body-part terms express parts of a whole with meanings mostly related to anatomy (c.f. §3.3.3). However, in general BPTs are a highly heterosemous and polysemous lexical subclass of nouns and therefore have a wide range of functions and meanings. BPTs appear incorporated with verbs (see §6.1.5), adjectives (see §3.3.1.5), adverbs, and other nouns (see §4.3.4). These terms are used literally and figuratively to refer to parts of other objects based on similarities of shape, configuration, or orientation to the anatomical referent. This lexical subclass is further distinguished by having independent and dependent forms.

Independent forms of BPTs are inherently possessed nouns that can function as syntactic arguments. Dependent forms combine with each other and other lexical classes, like verbs, nouns, adjectives, and numeral roots in complex ways. The subclass of body-part nouns in ZT has taken on functional properties similar to adpositions in other languages, where the lack of adpositions as an independent word class is typologically unusual even in the Mesoamerican region (Dryer 2013). BPTs in independent and dependent forms are both used to express spatial relations and commonly incorporate with regular stative and stative posture verbs to form complex locative expressions and existential constructions (cf. §3.3.3.1 and §5.3). The use of BPTs incorporated with verbs in expressions of literal and spatial relations and as valency-increasing morphemes is a grammatical feature that ZT shares with other languages in Mesoamerica (Campbell 2013). However, only a small restrictive set of BPTs in ZT seem to have valency-increasing functions (see §6.1.5). BPTs incorporated with verbs were further described as adding certain (semantic) participants to the meaning of the verb stem, such as PATIENT, LOCATION, or INSTRUMENT as is typologically common of this lexical class (Mithun 1984, 1997).

Numerals in ZT show a vigesimal pattern typical of Mesoamerican languages (Campbell 2013). Numeral roots are bound morphemes that necessarily take a classifier which is selected by a property of the nominal head (see §3.4.3). ZT has a fairly large set of numeral classifiers when compared to other Totonacan languages; the classifiers reflect properties of nouns such as animacy, shape, or form, or provide a quantitative measure of the nominal referent. Body-part terms are grammaticalized in the numeral system as classifiers, which is also a well-known property of the languages in the Mesoamerican area. In addition to quantifying a noun within the noun phrase, numerals have anaphoric functions and some may be used adverbially. These semantic categories and functions are quite common to languages with numeral classifiers (Aikhenvald 2017, Grinevald 2015). While the use of numeral classifiers is widespread in Mesoamerica and elsewhere, they are not present in large parts of the world (Gil 2013). The particular details of classifiers described for ZT varies widely even amongst closely related languages within the family.

Chapter 4 has presented the class of nouns in ZT. Nouns in ZT do not inflect for case and show no obligatory agreement properties. A common property of nouns in the Mesoamerican area is that they are optionally marked for plurality and are therefore

ambiguous between a singular or plural reading outside of context (see §4.2.1). Nouns also exhibit a head-marking strategy in possessive constructions that is characteristic of the region (Campbell et al. 1986, Campbell 2013). The lexicon of nouns includes a sub-class of inalienably possessed nouns, namely, body-part and kinship terms, which is a predominant feature of the area (Bickel & Nichols 2013). ZT also shows highly productive affixes that derive nouns from verbs (see §4.3). Deverbal nouns formed with suffixes and a process described as prosodic apophony were described as highly lexicalized. Other derivational affixes create nouns expressing an AGENT or PLACE. Nominal compounding in ZT commonly lexicalizes terms for plant and animal species and demonstrates some phonological properties that distinguish noun compounds from other complex nominals. Some of these nominal compounds resemble a number of loan translations or calques that are also found in Mesoamerican languages (Smith-Stark 1982).

Chapters 5 and 6 presented the inflectional and derivational morphology of the polysynthetic and agglutinative verb in ZT. ZT employs both prefixing and suffixing for marking inflection and derivation, which is not a typologically-common property of the world's languages, but it is a general characteristic of polysynthetic languages in this region (Bybee et al. 1990, Dryer 2013). Subject markers may precede or follow object markers corresponding to an order of affixes which is typical for Mesoamerica but rather unusual in languages in other parts of the world (Siewierska 2013). ZT makes an inclusive-exclusive distinction with first person plural subjects and shows ambiguity in the marking of person and number in transitive constructions similar to many indigenous languages of the Americas (cf. Heath 1998). The ambiguity in agreement marking in ZT particularly arises where subject and object are speech-act participants and one or both are plural, although ambiguity is also seen in the marking of number and third person participants (see §5.1).

Verbs in ZT have been distinguished as stative or dynamic based on formal morphological properties of the language. Dynamic verbs have been divided into three verb classes based on the inflectional patterns in the imperfective and perfective paradigms, which further showed substantial underspecification and irregularities in form (cf. §5.2). This inflectional pattern is similar to those found throughout Central Totonac with some variation. Stative verbs make no aspectual distinctions and can be formed with directional

or positional morphemes which is a distinctive feature shared by some Mesoamerican languages (Campbell 2013). Among the stative verbs, the posture verb *ma:* 'lie' is grammaticalized as the progressive marker in the aspectual paradigm, which provides further evidence of a widespread pattern in which posture verbs grammaticalize due to their semantics, as noted in Newman (2002). Causative and inchoative derivatives of stative verbs can form the basis of dynamic expressions. Stative and dynamic verbs further participate in a highly productive process of compounding to express locative, existential, directional and aspectual senses (see §5.3).

Verb morphology is further used to mark voice alternations and reciprocals (cf. §5.4). In ZT, the indefinite subject construction is used for reflexives, which is notable since cross-linguistically, the same form for reciprocals is more commonly used for marking reflexive constructions (Maslova & Nedjalkov 2013). The reciprocal construction, however, seems to be used only in expressions of subject-object reciprocity and some idiosyncratic constructions. The presence of a potential antipassive construction in ZT is not only less common than passive constructions but it is not cross-linguistically common in general (Polinsky 2013).

While the verb in ZT has been described as underspecified inflectionally, verbs may be described as potentially overspecified derivationally. Derivational morphemes combine with verb stems and with each other to form multi-valent stems or more specific or complex predicates (cf. §6.1). Valency-increasing derivational affixes add arguments expressing particular semantic roles. The causative, for example, combines with stative and dynamic verbs to add a syntactic subject expressing a CAUSER while another causative morpheme described as "stimulus" adds a syntactic subject that expresses the STIMULUS of the process or event denoted by the non-causative stem (cf. §6.1.1). These uses of the causative are cross-linguistically quite common (Dixon 2000). Further derivational possibilities are afforded by an unusually large, cross-linguistically speaking, set of applicative affixes (see §6.1.2), many of which are common to the Mesoamerican region (Polinsky 2013), such as the dative, instrumental, comitative, and allative. Other derivational morphemes are valency-decreasing or valency-neutral. The decausative for instance has different functions depending on the class and transitivity of the verb and has valency-decreasing effects combined with dynamic transitive verbs (see §6.1.3). One derivational prefix referred to as

the alienative is specific to the Totonacan languages (Levy 2002a, Beck 2004) and expresses the idea that the event described by the verb occurs in somebody else's domain; this prefix is generally neutral to valency changes but has valency-increasing effects in some idiosyncratic stems (see §6.1.4). Verb stems with incorporated body-part terms were described as highly productive in both form and function (see §6.1.5). A further noteworthy morphological property of dynamic and stative verbs is the potential to take adverbial affixes which modify the verb in aspectual, modal, or adverbial ways (see §6.2). These affixes do not change the valency of the verb and include a fairly large set of valency-neutral derivational morphemes, including inchoative, intensifier, repetitive, totalitative, distal, proximal, roundtrip, and desiderative. The data shows that, while in some cases verbal derivational processes form verbs in semantically compositional ways, the derivation may often create some lexicalized expressions with particular verbs that deserve specific lexicographic descriptions.

In sum, verbs, nouns, adjectives, and adverbs all show that morphological analyzability and semantic compositionality are on a continuum. Nouns and adjectives take typical inflectional categories, such as number, possession, and definiteness, but these categories can be expressed optionally. Typical derivational categories in all lexical classes often form synchronically lexicalized and idiosyncratic constructions as is common with derivation. Adverbs may constitute the most grammatically and lexically heterogeneous class in ZT. Lexical adverbs are a semantically diverse class that express meanings related to space, time, configuration, manner, deixis, and meanings involving participants and complex scenes similar to schemas denoted by verbs. These properties all show that categorial distinctions are best thought of as gradient rather than neatly defined categories.

Moreover, the division of labor between inflection and derivation seems to be a vague one. Typical verbal inflectional categories involve functional and grammatical information that are often morphologically underspecified, irregular, or idiosyncratic. In contrast, typical derivational affixes may be overspecified and more stable in form, although they may also create semantically idiosyncratic constructions. Voice constructs and adverbial affixes show properties of being both grammatical elements and involved in stem formation. While this thesis took a form-driven approach to the linguistic analysis of ZT, it would be interesting to see what conclusions could be made having taken an actual usage-

based approach to the description. The next section briefly discusses some of the limitations of this study.

7.2 Limitations and Future Research

Further work is needed to better understand the ZT language and to form a comprehensive corpus of materials for community members, scholars, and future generations. In this section, the discussion will therefore involve some of the methodological and descriptive limitations of this study and consider areas for future research. To begin with, the orthography used in this thesis is a phonemic one as is common linguistic practice but which in a sense depicts an idealized form of the language, where the data has been edited for presentation and represent a slower more careful speech. The issue of laryngealization, in particular, is one of the most problematic aspects of transcribing Totonacan speech, which may also give a disingenuous perspective of the language in use. This area of research between citation and conversational form is interesting because vowel phonation is highly complex and complicated by factors such as variability in production between speakers. Even phonetic studies on vowel laryngealization in Totonacan remain inconclusive as to the acoustic correlates relevant for the production and perception of laryngealization (i.e., Misantla Totonac: Trechsel & Faber (1992), unpublished); Papantla Totonaca: Alarcón (2008), and Upper Necaxa Totonac: Garcia-Vega and Tucker (2019), Puderbaugh (2019)) even though speakers themselves are metalinguistically aware of the contrastive effects of vowel phonation. Citation forms of words may help reveal laryngeal patterns but connected speech shows processes of laryngeal spreading that complicate, although they are still relevant to, a phonological description. Much work on phonological and morphophonological processes in general remains to be done on the language as well as on prosody, which is a highly understudied topic.

The description of the various lexical classes included in this dissertation has further revolved around forms being underspecified, irregular, or idiosyncratic; this challenges a completely analytical and analyzable approach and suggests that the data may better be described synthetically and listed lexically. Most categories in ZT additionally seem to be

vague falling somewhere within a continuum between, for example, inflection or derivation, valency increasing or adverbial modification, or being fully compositional or completely idiosyncratic. A description of the lexical semantics of word forms and their combinatorial potential is further needed in order to better understand the collocational and distributional patterns of these forms which is highly lacking from this study.

Higher level syntactic structures within discourse and narrative contexts represent another potential area for future research. The organization of information structure is variable in ZT; some clauses are combined by juxtaposition while other complex clauses are formed with a variety of subordinating particles which show a variety of functions. Furthermore, while ZT has been described as having flexible word order, the discourse-pragmatic functions that govern this order are not well understood. The use of voice in discourse narratives may further play important roles in reference-tracking, establishing or maintaining topic chains, and foregrounding or backgrounding participants, but these generalizations require a deeper analysis of argument and information structure within the context of a more extensive corpus of connected speech across multiple genres.

Other typologically interesting and relevant features of the language needing further exploration include the complex ways in which tense, mood, aspect, and voice systems interact. Additionally, the detailed template presented in Figure 6 depicts a structure that while theoretically possible does not reflect what normally happens in natural discourse. An impressionistic view of contextualized examples from the corpus of discourse and narratives in ZT shows that verb stems are quite simple derivationally. Most of the examples of clausal predicates in the ZT database appear with less than one derivational affix on a verb used in context — examples of this can be seen in the texts presented in Appendix E. Even though the database is quite small, verb stems with two or more derivational affixes seem to be infrequent. What is lacking in this study is an analysis of the frequency and distribution of the verb stem and the forms they commonly appear in context from an ideally larger textual corpus. A corpus analysis of the forms and functions of verb stems used in context may give a better picture of the verb from the native speaker perspective; that is, it may provide a deeper understanding of how these expressions have conventionalized and better reflect what speakers actually do.

Last but not least, another highly understudied area in Totonacan linguistics is a description of deictic elements, such as demonstratives and deictic adverbs. Some Totonac languages have been described as having a large system of deictic elements whose functions and uses are largely undescribed. The study of larger discourse narratives in ZT could shed light on these areas of research that are important not only from a typological and theoretical perspective but also from an overall applied area of study for the future.

In terms of documentation methodology, the field of documentary linguistics has rapidly changed from an elicitation era to one that seeks to collect data that represent more natural discourse as well as recording data that includes both audio and video. Language documentation has become increasingly reliant on creating digital resources that can be applied across different platforms and scholarly communities for different purposes, such as research, teaching, and development (Bird & Simons 2003). One of the important aspects of best practices in language documentation mentioned in Himmelmann (2006), for example, is accountability and the ability for users to evaluate linguistic analyses and verify data for phonetic transcriptions and linguistic descriptions. Language documentation efforts should further aim to be useful for future generations of scholars and community activists. This means that archived materials need to be understandable, findable, preservable and usable (Bird & Simons 2003). My own documentation project, however, took a more traditional approach which was based mostly on formal elicitation, on textual and audio data some of which is time-aligned, and on a small collection of narratives and discourse samples. All of the data collected for this project can be found in the Language Documentation Research Cluster (LDRC) at the University of Alberta, which includes the audio data in addition to (timed-aligned) textual, phrasal, and lexical transcriptions. Some data and short stories are also accessible through the Endangered Language Fund thanks to a Language Legacies Grant received in 2013. The documentation materials used in this thesis form only a part of the data collected. The fieldwork carried out in support of this dissertation also resulted in over 10 hours of naturalistic conversational data as part of David Beck's and Jonathan Amith's project *Totonac ethnobotanical knowledge: Documenting traditional ecological knowledge across communities* that is deposited with the Endangered Languages Archive. These data are not used as part of this dissertation since it remains largely untranslated and untranscribed but is fully accessible through the

Endangered Languages Archive (<http://hdl.handle.net/2196/87cccad7-3103-40f0-8212-cfe8d5241431>). The data collected include video recordings of natural dialogue concerning traditional botanical knowledge and cultural practices in ZT, and traditional dances at the annual festival of San Manuel in the community.

Language documentation projects are particularly important in the Totonacan region given the number of speakers and the wide spread of Spanish. We can know more about the Zihuateutla culture and language by creating and expanding a corpus of spoken discourse, which would be among the next steps in an overall documentation project. Working with community members in translating and transcribing a larger, discourse-centered corpus, constitutes the most productive and immediate next step to further the linguistic description of ZT. A language corpus and description will not only expand our current knowledge of the language as it is used by speakers, but also provide a better understanding of its typological profile and its historical relations. Building a more comprehensive database would also provide a fundamental resource for future generations. Given the situation concerning language attrition and the increase of Spanish in the region, a lasting record of the language becomes increasingly important. A linguistic corpus and description can provide a useful record of Totonacan history and culture, and can provide resources for the growing community of Totonacists and local scholars in Mexico.

References

- Aikhenvald, Alexandra. 2000. *Classifiers: A typology of noun categorization devices*. Oxford: Oxford University Press.
- Aikhenvald, Alexandra. 2004. *Evidentiality*. Oxford: Oxford University Press.
- Aikhenvald, Alexandra. 2006. Classifiers and noun classes: Semantics. In Keith Brown (ed.), *Encyclopedia of language and linguistics*, 2nd edition, 1: 463–470. Elsevier: Oxford.
- Aikhenvald, Alexandra. 2017. A typology of noun categorization devices. In Alexandra Aikhenvald & Robert Dixon (eds.), *The Cambridge handbook of linguistic typology*, Cambridge handbooks in language and linguistics, 361–404. Cambridge: Cambridge University Press.
- Aikhenvald, Alexandra. 2018. *Serial verbs*. Oxford studies in typology and linguistic theory. New York: Oxford University Press.
- Alarcón Montero, Rafael. 2008. Indicios acusticos de las vocales rechinadas del totonaco. In Pedro Martín Butragueño & Esther Herrera Zendejas (eds.), *Fonología instrumental: patrones fónicos y variación*, 89–105. México: El Colegio de México.
- Arana Osnaya, Evangelina. 1953. Reconstrucción del prototonaco. In Ignacio Bernal & Eusebio Dávalos Hurtado (eds.), *Huastecos, Totonacos y sus vecinos*, *Revista Mexicana de estudios antropológicos*, 13(2/3): 123–30.
- Aschmann, Herman. P. 1946. Totonaco phonemes. *International Journal of American Linguistics*, 12(1): 34–43.
- Aschmann, Herman. P. 1962. *Vocabulario totonaco de la sierra*. Mexico, D.F.: Summer Institute of Linguistics.
- Aschmann, Herman. P. 1973. *Diccionario totonaco de Papantla*. Mexico, D.F.: Summer Institute of Linguistics.

- Aschmann, Herman. P. 1983. *Vocabulario totonaco de la Sierra*. In Mariano Silva y Aceves (eds.), *Serie de vocabularios indígenas*, vol. 7. Second edition. Mexico: Summer Institute of Linguistics.
- Aschmann, Elizabeth D. 1984. *The relative clause in Highland Totonac*. Summer Institute of Linguistics, Mexico Workpapers 6: 1–27.
- Aschmann, Herman & William L. Wonderly. 1952. Affixes and implicit categories in Totonac verb inflection. *International Journal of American Linguistics*, 18(3): 130–145.
- Aschmann, Herman P. 2000. *Coyutla dictionary*. Bartholomew collection of unpublished materials Summer Institute of Linguistics International, Mexico branch. URL: www.sil.org/resources/language-culture-archives
- Beck, David. 2000. The syntax, semantics, and typology of adjectives in Upper Necaxa Totonac. *Linguistic Typology*, 4: 213–250.
- Beck, David. 2003. Person-hierarchies and the origin of asymmetries in Totonac verbal paradigms. *Lingüística Atlántica*, 23: 35–68.
- Beck, David. 2004. *A grammatical sketch of Upper Necaxa Totonac*. LINCOM: Europa.
- Beck, David. 2006a. Control of agreement in multi-object constructions in Upper Necaxa Totonac. In Atsushi Fujimori & Maria Amelia Reis Silva (eds.), *Proceedings of the 11th Workshop on structure and constituency in the languages of the Americas*, 1–11. Vancouver: UBC Working Papers in Linguistics.
- Beck, David. 2006b. The emergence of ejective fricatives in Upper Necaxa Totonac. In Robert Kirchner (ed.), *University of Alberta working papers in linguistics*, 1.
- Beck, David. 2007a. Voice and agreement in multi-object constructions in Upper Necaxa Totonac. In Zarina Estrada Fernández & Ana Lidia Munguía Duarte (eds.), *Memorias de IX encuentro internacional de lingüística en el noroeste*, 59–74. Hermosillo: University of Sonora.
- Beck, David. 2007b. Argument quantification and qualification in Upper Necaxa Totonac. *Proceedings of the 33rd annual meeting of the Berkeley Linguistics Society*, Berkeley: University of California, Berkeley.

- Beck, David. 2007c. What to do with the Ideophones? A problem of lexical classification from Upper Necaxa Totonac. In Leo Festschrift Wanner for Igor Mel'čuk (ed.), *Studies in language companion series*, 1–42. Amsterdam: Benjamins.
- Beck, David. 2008a. Ideophones, adverbs, and predicate qualification in Upper Necaxa Totonac. *International Journal of American Linguistics*, 74: 1–46.
- Beck, David. 2008b. Variable ordering of affixes in Upper Necaxa Totonac. In Seok Koon Chin & Hude Fusheini (eds.), *Proceedings of the 12th workshop on structure and constituency in the languages of the Americas*, 29–38. Vancouver: University of British Columbia working papers in linguistics.
- Beck, David. 2011a. *Upper Necaxa Totonac dictionary*. Berlin: Mouton de Gruyter.
- Beck, David. 2011b. Lexical, quasi-inflectional, and inflectional compounding in Upper Necaxa Totonac. In Alexandra Aikhenvald & Pieter Muysken (eds.), *Multi-verb constructions: A view from the Americas*, 63–106. Leiden: Brill.
- Beck, David. 2013. Argument quantification and qualification in Upper Necaxa Totonac. In Zhenya Antić, Charles B. Chang, Clare S. Sandy & Maziar Toosarvandani (eds.), *Proceedings of the 33rd annual meeting of the Berkeley Linguistics Society: Special session of languages of Mexico and central America*, 17–27. Berkeley, CA: University of California, Berkeley.
- Beck, David. 2014. Totonacan languages. *Workshop on the state of the arts in Mesoamerican languages*, Max Planck Institute for Evolutionary Anthropology. Leipzig, December 6–7.
- Beck, David. 2016. Uniqueness and grammatical relations in Upper Necaxa Totonac. *Linguistics*, 54: 59–118.
- Beck, David. 2017a. Relative clauses in Upper Necaxa Totonac: Local, comparative, and diachronic perspectives. *Linguistic Discovery*, 14: 1–44.
- Beck, David. 2017b. Las categorías de modo en el totonaco del Río Necaxa: Una descripción preliminar. Presentation: <https://www.researchgate.net/publication/321587992>

- Beck, David. (to appear). Totonacan. In Søren Wichmann (ed.), *The languages and linguistics of middle and central America: A comprehensive guide*, Berlin: Mouton de Gruyter.
- Beck, David & Igor A. Mel'čuk. 2011. Morphological phrasemes and Totonacan verbal morphology. *Linguistics*, 49: 175–228.
- Belmar, Francisco. 1910. *Lenguas de la familia nahuatlana: su clasificación*. Review of the second session of the 17th international congress of Americanists held in Mexico City in September, 238–50.
- Bickel, Balthasar & Johanna Nichols. 2013. Obligatory possessive inflection. In Matthew S. Dryer & Martin Haspelmath (eds.), *The world atlas of language structures online*, Leipzig: Max Planck Institute for Evolutionary Anthropology. URL: <http://wals.info/chapter/58> (Last accessed on 2021-03-16).
- Bird, Steven & Gary Simons. 2003. Seven Dimensions of portability for language documentation and description. *Language*, 79(3), 557-582.
- Bishop, Ruth. 1984. *Consonant play in lexical sets in Northern Totonac*. Summer Institute of Linguistics–Mexico Workpapers, 5: 24–31.
- Bohnemeyer, Jürgen, Melissa Bowerman & Penelope Brown. 2001. Cut and break clips. In Stephen C. Levinson & N.J. Enfield (eds.), *Manual for the field season 2001*, 90–96. Nijmegen: Max Planck Institute for Psycholinguistics.
- Bower, Bethel. 1948. Stems and affixes in Tepehua numerals. *International Journal of American Linguistics*, 14: 20–21.
- Bowerman, Melissa & Eric Pederson. 1992. Topological relations picture series. In Stephen C. Levinson (ed.), *Space stimuli kit 1.2: November 1992*, 51. Nijmegen: Max Planck Institute for Psycholinguistics.
- Bresnan, Joan & Lioba Moshi. 1990. Object asymmetries in comparative Bantu syntax. *Linguistic Inquiry* 21:147–85.
- Brown, Cecil H., David Beck, Grzegorz Kondrak, James K. Watters & Søren Wichmann. 2011. Totozoquean. *International Journal of American Linguistics*, 77: 323–72.

- Brown, Cecil H., Eric W. Holman, Søren Wichmann & Viveka Velupillai. 2008. Automated classification of the world's languages: A description of the method and preliminary results. *STUF – Language Typology and Universals* 61(4): 285–308.
- Brown, Cecil H., Søren Wichmann & David Beck. 2014. Chitimacha: A Mesoamerican language in the Lower Mississippi Valley. *International Journal of American Linguistics*, 80: 425–74.
- Brown, Cecil H. & Stanley R. Witkowski. 1981. Figurative language in a universalist perspective. *American Ethnologist*, 8(3), 596–615.
- Brylak, Agnieszka, Julia Madajczak, Justyna Olko & John Sullivan. 2020. *Loans in colonial and modern Nahuatl*. Berlin, Boston: De Gruyter Mouton.
- Bybee, Joan L., William Pagliuca & Revere D. Perkins. 1990. On the asymmetries in the affixation of grammatical material. In William Croft, Keith Denning & Kemmer, Suzanne (eds.), *Studies in Typology and Diachrony: Papers Presented to Joseph H. Greenberg on his 75th Birthday*, 1-42. Amsterdam: John Benjamins.
- Bybee, Joan L., Revere D. Perkins & William Pagliuca. 1994. *The evolution of grammar: tense, aspect, and modality in the languages of the world*. Chicago: University of Chicago Press.
- Campbell, Lyle. 2013. *Historical linguistics: an introduction*. Edinburgh: Edinburgh University Press.
- Campbell, Lyle. 2016. Comparative linguistics of Mesoamerican languages today. *Veleia*, December 13, 33: 113–34.
- Campbell, Lyle, Terrance Kaufman & Thomas Smith-Stark. 1986. Meso-America as a linguistic area. *Language*, 62(3), 530-570.
- Citko, Barbara. 2004. On headed, headless, and light-headed relatives. *Natural Language and Linguistic Theory*, 22(1), 95–126.
- Comrie, Bernard. 1989. *Language universals and linguistic typology*. Oxford: Blackwell.

- Comrie, Bernard & Tania Kuteva. 2013. Relativization strategies. In *The world atlas of language structures online*, In Matthew S. Dryer & Martin Haspelmath (eds.), Leipzig: Max Planck Institute for Evolutionary Anthropology. URL: <http://wals.info/chapter/s8> (Last accessed 2015-09-14).
- Corbett, Greville G. 2000. *Number*. Cambridge: Cambridge University Press.
- Croft, William. 1991. *Syntactic categories and grammatical relations: The cognitive organization of information*. University of Chicago Press.
- Dahl, Östen. 1985. *Tense and aspect systems*. Oxford: Blackwell.
- Davletshin, Albert. 2008. *Classification of the Totonacan languages*. Presentation: Problemy izučenij dal'nego rodstva jazykov (k 55-letij C. A. Starostina), Russian State University for the Humanities, Moscow, March 25–28.
- Davletshin, Albert. 2014. *Los sustantivos, adverbios y adjetivos ideofónicos en el tepehua de Pisaflores, Veracruz, México*. Presentation: Primer congreso internacional de investigaciones sobre el mundo totonaco, Lipuntahuaca Huehuetla, Puebla, August 27–29.
- Davletshin, Albert. 2016. *Glottalization of stops and affricates in San Pedro Tziltzacuapan Tepehua, Veracruz, Mexico*. Presentation: Second workshop on the sound systems of Mexico and central America, Mexico City, March 30–April 1.
- Davletshin, Albert. 2018. Las vocales finales, los procesos fonéticos finales y mediales en el prototonaco-tepehua: un primer acercamiento. In Elsa Cristina Buenrostro, Lucero Meléndez Guadarrama, & Marcela San Giacomo Trinidad (eds.), *Lingüística histórica de lenguas indomexicanas: hallazgos y discusiones recientes*, 139–186. IIA-UNAM: México.
- Davletshin, Albert. 2019a. *Some topics in Tepehua-Totonac historical phonology* (Некоторые вопросы исторической фонетики тепеуа-тотонакских языков). M.A. Dissertation. Moscow, Russian State University for the Humanities.
- Davletshin, Albert. 2019b. Laryngealized vowels and laryngealized consonants in the history of the Totonacan languages of Mexico. *Journal of Language Relationship*, 17(3/4): 177–196.

- Dingemanse, Mark. 2019. 'Ideophone' as a comparative concept. In Kimi Akita & Prashant Pardeshi (eds.), *Ideophones, Mimetics, and Expressives*, 13-33. Amsterdam: John Benjamins.
- Dixon, Robert M.W. 2000. A typology of causatives: form, syntax and meaning. In Robert M.W. Dixon & Alexandra Y. Aikhenvald (eds.), *Changing valency: Case studies in transitivity*, 332–383. Cambridge: Cambridge University Press.
- Dixon, Robert M. W. & Alexandra Y. Aikhenvald. 1997. A typology of argument-determined constructions. In Joan Bybee, John Haiman & Sandra A. Thompson (eds.), *Essays on language function and language type: Dedicated to T. Givon*, Amsterdam: John Benjamins, 71–113.
- Dryer, Matthew S. 1997. On the 6-way word order typology. *Studies in Language*, 21: 69–103.
- Dryer, Matthew S. 2013. Order of adverbial subordinator and clause. In Matthew S. Dryer & Martin Haspelmath (eds.), *The world atlas of language structures online*, Leipzig: Max Planck Institute for Evolutionary Anthropology. URL: <http://wals.info/chapter/94> (Last accessed on 2021-03-30).
- Dryer, Matthew S. 2013. Order of adposition and noun phrase. In Matthew S. Dryer & Martin Haspelmath (eds.), *The world atlas of language structures online*, Leipzig: Max Planck Institute for Evolutionary Anthropology. URL: <http://wals.info/chapter/85> (Last accessed on 2021-04-07).
- Dryer, Matthew S. 2013. Order of relative clause and noun. In Matthew S. Dryer & Martin Haspelmath (eds.), *The world atlas of language structures online*, Leipzig: Max Planck Institute for Evolutionary Anthropology. URL: <http://wals.info/chapter/90> (Last accessed on 2021-05-10).
- Dryer, Matthew S. 2013. Polar questions. In Matthew S. Dryer & Martin Haspelmath (eds.), *The world atlas of language structures online*, Leipzig: Max Planck Institute for Evolutionary Anthropology. URL: <http://wals.info/chapter/116> (Last accessed on 2021-03-17).

- Dryer, Matthew S. 2013. Prefixing vs. suffixing in inflectional morphology. In Matthew S. Dryer & Martin Haspelmath (eds.), *The world atlas of language structures online*, Leipzig: Max Planck Institute for Evolutionary Anthropology. URL: <http://wals.info/chapter/26> (Last accessed on 2021-03-17).
- Eberhard, David M., Gary F. Simons & Charles D. Fennig (eds.). 2020. *Ethnologue: languages of the world*. Twenty-third edition. Dallas, Texas: Summer Institute of Linguistics International. URL: <http://www.ethnologue.com>
- England, Nora. 2004. *Entrando y saliendo de una posición: Palabras afectivas en Mam*. Presentation: Lengua y mantenimiento cultural en Mesoamérica: Un simposio. The University of Texas at Austin.
- Frawley, William. (1992). *Linguistic semantics*. Hillside, NJ, Lawrence Erlbaum.
- García Rojas, Blanca. 1978. *Dialectología de la zona Totonaco-Tepehua*. Doctoral dissertation, Ciudad de México: Escuela Nacional de Antropología e Historia.
- García Ramos, Crescencio. 1979. Fonología del totonaco del Tajín, Veracruz. *Cuadernos Antropológicos* (Veracruz), 2: 133–176.
- García Ramos, Crescencio. 1985. *Qoló Aktzín*. Xalapa, Veracruz: Instituto de Antropología, Universidad Veracruzana.
- García Ramos, Crescencio. 2007. *Diccionario básico: totonaco-español y español-totonaco*. Xalapa: Academia Veracruzana de las lenguas indígenas, Secretaría de educación de Veracruz.
- García-Vega, Michelle. 2017. The numeral-classifier in Upper Necaxa Totonac: unitization and lexical specification. *Working papers of the linguistics circle (WPLC)*, University of Victoria, 27 (1): 27–51.
- García-Vega, Michelle. 2018. The functions and uses of numeral-classifiers in Upper Necaxa Totonac. *Anthropological Linguistics*, 60 (4): 346–386.
- García-Vega, Michelle & Benjamin Tucker. 2019. Acoustic properties of vowels in Upper Necaxa Totonac. *Journal of the International Phonetic Association*, 51 (1), 55-74.

- García Vidal, Felix, & Toto Augusto García García. 1972. *Manual del dialecto totonaco de la región de Papantla*. México, D.F.: Porrúa Hnos. y Compañía.
- Gil, David. 2013. Numeral Classifiers. In Matthew S. Dryer & Martin Haspelmath (eds.), *The world atlas of language structures online*, Leipzig: Max Planck Institute for Evolutionary Anthropology. URL: <http://wals.info/chapter/55> (Last accessed on 2021-03-17)
- Givón, Thomas. 1991. Serial verbs and the mental reality of ‘event’: Grammatical vs. cognitive packaging. *Approaches to grammaticalization*, 1:81–127.
- Gordon, Mathew. 2016. Phoneme inventories. *Phonological Typology*. Oxford: Oxford University Press.
- Greenberg, Joseph H. 1987. *Language in the Americas*. Palo Alto, California: Stanford University Press.
- Grinevald, Colette. 2000. A morphosyntactic typology of classifiers. *Systems of nominal classification*, 4: 50-92.
- Grinevald, Colette. 2006. The expression of static location in a typological perspective. In Maya Hickmann & Stéphane Robert (eds.), *Space in languages: Linguistic systems and cognitive categories*, Amsterdam/Philadelphia: John Benjamins, 29-58.
- Grinevald, Colette. 2015. Linguistics of classifiers. *International encyclopedia of the social and behavioral sciences*, 3: 811–818.
- Guillaume, Antoine & Harold Koch. 2021. *Associated motion*. Berlin, Boston: De Gruyter Mouton.
- Haspelmath, Martin. 2013. Indefinite pronouns. In Matthew S. Dryer & Martin Haspelmath (eds.), *The world atlas of language structures online*, Leipzig: Max Planck Institute for Evolutionary Anthropology. URL: <http://wals.info/chapter/46> (Last accessed on 2021-04-06.)

- Haspelmath, Martin & Oda Buchholz. 1998. Equative and similative constructions in the languages of Europe. In Johan van Auwera (ed.), *Adverbial constructions in the languages of Europe*, 277-334. Berlin: Mouton de Gruyter.
- Haspelmath, Martin & Uri Tadmor. 2009. *Loanwords in the world's languages*. Berlin, New York: De Gruyter Mouton.
- Heine, Bernd. 1997. *Cognitive foundations of grammar*. New York/Oxford: Oxford University Press.
- Heine, Bernd. 2014. The body in language: observations from grammaticalization. In Matthias Brenzinger & Iwona Kraska-Szlenk (eds.), *The body in language: Comparative studies of linguistic embodiment*, 13–32. Leiden: Brill.
- Herrera Zendejas, Esther. 2009. *Formas sonoras: mapa fónico de las lenguas mexicanas*. México, D.F.: Colegio de México.
- Himmelmann, Nikolaus P. 2006. Language documentation: What is it and what is it good for? In Jost Gippert, Nikolaus P. Himmelmann & Ulrike Mosel (eds.), *Essentials of language documentation (Trends in linguistics. Studies and monographs, 178)*, Berlin: Mouton de Gruyter, 1-30.
- Ichón, Alain. 1969. *La religion des Totonagues de la Sierra*. Etudes et documents de l'Institut d'Ethnologie, Université de Paris.
- Instituto Nacional de Estadística y Geografía (INEGI). 2020. *Censo de población y vivienda de 2020*. [2020 Census of population and residence.] Accessed 2021 of October 29.
- Juárez Esteban, Adela. 2016. *Los predicados complejos en el totonaco de Tuxtla, Puebla*. MA thesis, Centro de Investigaciones y Estudios Superiores en Antropología Social.
- Kaplan, Aaron F. 2006. Vowel length and coda cluster interactions in Misantla Totonac. *University of Pennsylvania working papers in linguistics*, 12: 161–174.
- Kaufman, Terrence. 1988. *Seminar notes from sound symbolism*. University of Pittsburgh.

- Kaufman, Terrance, Carolyn MacKay & Frank Trechsel. 2004. *Cuestionario lingüístico para la investigación de las variaciones dialectales de la lengua totonaca* (Linguistic questionnaire for the investigation of dialect variations of the Totonac language).
- Kemmer, Suzanne. 1993. The middle voice. *Typological Studies in Language*, vol. 23. Amsterdam, Philadelphia: John Benjamins Publishing.
- Kirchner, Robert & Eleni Varelas. 2002. *A cue-based approach to the phonotactics of Upper Necaxa Totonac*. Presentation: 7th workshop on structure and constituency in the languages of the Americas. University of Alberta, Edmonton, Alberta.
- Kryder, Nancy J. 1987. *A phonological and morphological sketch of Tepehua*. Doctoral dissertation. University of Montana.
- Kung, Susan Smythe. 2005. *Sound symbolism and expressive language in Huehuetla Tepehua*. Presentation: Annual meeting of the society for the study of the indigenous languages of the Americas, Oakland, California.
- Kung, Susan Smythe. 2007a. *A descriptive grammar of Huehuetla Tepehua*. Doctoral dissertation. University of Texas, Austin.
- Kung, Susan Smythe. 2007b. Numeral classifiers in Lhiimaqalhqama'. In Douglas S. Bigham, Frederick Hoyt, Nikki Seifert, Alexandra Teodorescu & Jessica White (eds.), *Topics in the morphosyntax of underrepresented languages: Papers from 9th Texas linguistic society conference*, Austin, Texas, 185–201. Stanford, CA: CSLI Publications.
- Lam, Yvonne. 2009. The straw that broke the language's back: Language shift in the Upper Necaxa valley of Mexico. *International Journal of the Sociology of Language*, 195: 219–233.
- Lam, Yvonne. 2012. Oportunidad, ideología y la pérdida del totonaco del río Necaxa. *Las lenguas totonacas y tepehuas: Textos y otros materiales para su estudio* (The Totonac and Tepehua languages: Texts and other reference materials), In Paulette Levy & David Beck (eds.), 519–543. Mexico City: Universidad Nacional Autónoma de México.
- Lam, Yvonne & David Beck. 2008. Language loss and linguistic suicide: A case study from the Sierra Norte de Puebla. In Cummins, Sarah, Brigit Janoski & Patricia Shaw A. (eds.), *All the things you are: A Festschrift for Jack Chambers*, 5–16. Toronto: Toronto Working Papers in Linguistics.

Levy, Paulette. 1987. *Fonología del totonaco de Papantla, Veracruz*. Mexico City: Universidad Nacional Autónoma de México Press.

Levy, Paulette. 1990. *Totonaco de Papantla, Veracruz*. Mexico City: Colegio de México.

Levy, Paulette. 1992a. Body part prefixes in Papantla Totonac. In Lourdes de León & Stephen Levinson (eds.), *Spatial description in Mesoamerican languages*, 530–542. Berlin: Academie Verlag.

Levy, Paulette. 1992b. Adjectives in Totonac: Descriptive statement and typological considerations. *International Journal of American Linguistics*, 58: 269–98.

Levy, Paulette. 1994. La base verbal en totonaco. In Carolyn J. MacKay & Verónica Vásquez (eds.), *Investigaciones lingüísticas en Mesoamérica*, 227–62. Mexico City: Universidad Nacional Autónoma de México.

Levy, Paulette. 1996. Compuestos verbales en totonaco: ¿Incorporación nominal? [Verbal compounds in Totonac: Noun incorporation?] In Zarina Estrada Fernández, Max Figueroa Esteva & Gerardo López Cruz (eds.), *III Encuentro de lingüística en el Noroeste. Tomo, (1) 97–117*. Hermosillo: Unison.

Levy, Paulette. 1999a. From ‘Part’ to ‘Shape’: Incorporation in Totonac and the issue of classification by verbs. *International Journal of American Linguistics*, 65: 127–75.

Levy, Paulette. 1999b. ‘Where’ rather than ‘what’: Incorporation of ‘parts’ in Totonac. In Doris L. Payne & Emmanuel Barshi (eds.), *External possession*, 325–38. Amsterdam: John Benjamins.

Levy, Paulette. 2002a. ‘Hacer algo de metiche’: ¿Una posible fuente de causativo? [Be a busybody: A possible source of the causative?] *Memorias de jornadas filológicas 2000*, 425–38. Mexico: Universidad Nacional Autónoma de México.

Levy, Paulette. 2002b. El aplicativo dativo/benefactivo en totonaco de Papantla. [The dative/benefactive applicative in Papantla Totonac.] In Zarina Estrada Fernández & Rosa María Oriz Ciscomani (eds.), *Memorias del VI encuentro internacional de lingüística en el noroeste. Tomo I*, 175–94. Hermosillo: Unison.

- Levy, Paulette. 2002c. Cuando un especificador funciona como un determinante: el caso del totonaco. [When a specifier functions as a determinative: The case of Totonac.] In Paulette Levy (ed.), *Del cora al maya yucateco: Estudios lingüísticos sobre algunas lenguas indígenas mexicanas*, 403–36. Mexico: Universidad Nacional Autónoma de México.
- Levy, Paulette. 2003. Parts in Papantla Totonac and the genesis of systems of numeral classification. *Sprachtypologie und Universalienforschung*, 57: 280–99.
- Levy, Paulette. 2004. Adjectives in Papantla Totonac. In Robert M. W. Dixon & Alexandra Y. Aikhenvald (eds.), *Adjective classes: A cross-linguistic typology*, 147–76. Oxford: Oxford University Press.
- Levy, Paulette. 2016. *La fonología prosódica del totonaco de Coatepec: Los textos totonacos de N.A. McQuown (1938–1940)*. SLI–Instituto de Investigaciones Filológicas Universidad Nacional Autónoma de México. Memorias del VII congreso de idiomas indígenas de latinoamérica, October 29–31, 2015, University of Texas, Austin.
- Levy, Paulette & David Beck (eds.). 2012. *Las lenguas totonacas y tepehuas: Textos y otros materiales para su estudio*. [Totonac-Tepehua languages: Texts and other materials for their study.] Mexico City: Universidad Nacional Autónoma de México.
- Lichtenberk, Frantisek 1991. Semantic change and heterosemy in grammaticalization. *Language* 67 (3):475–509.
- MacKay, Carolyn J. 1991. *A grammar of Misantla Totonac*. PhD dissertation, University of Texas at Austin.
- MacKay, Carolyn J. 1994. A sketch of Misantla Totonac phonology. *International Journal of American Linguistics*, 60: 369–419.
- MacKay, Carolyn J. 1999. *A grammar of Misantla Totonac*. Salt Lake City: University of Utah Press.
- MacKay, Carolyn J. 2011. Una reconstrucción del acento primario en el proto-totonacotepehua. In Ana Lidia Munguía Duarte (ed.), *Colección de estudios lingüísticos I. Fonética, morfología y tipología semántico-sintáctica*. 93–125. Hermosillo: Universidad de Sonora.

- MacKay, Carolyn J. & Frank R. Trechsel. 2003. Reciprocal /laa-/ in Totonacan. *International Journal of American Linguistics*, 69: 275–306.
- MacKay, Carolyn J. & Frank R. Trechsel. 2005. *Totonaco de Misantla, Veracruz*. Mexico City: El Colegio de México.
- MacKay, Carolyn J. & Frank R. Trechsel. 2006. Totonacan languages. *Encyclopedia of language and linguistics*, In Keith Brown (ed.), 2nd Edition. Oxford: 13: 3–8. Amsterdam: Elsevier.
- MacKay, Carolyn J. & Frank R. Trechsel. 2008. Symmetrical objects in Misantla Totonac. *International Journal of American Linguistics*, 74: 227–55.
- MacKay, Carolyn J. & Frank R. Trechsel. 2010. *Tepehua de Pisafloras, Veracruz*. Archivo de lenguas indígenas de México, 30. México, D.F.: Colegio de México.
- MacKay, Carolyn J. & Frank R. Trechsel. 2012. Bibliografía de las lenguas totonacas y tepehuas. In Paulette Levy & David Beck (eds.), *Las lenguas totonacas y tepehuas. Textos y otros materiales para su estudio*, Mexico D.F.: Universidad Nacional Autónoma de Mexico, 545–589.
- MacKay, Carolyn J. & Frank R. Trechsel. 2013. A Sketch of Pisafloras Tepehua Phonology, *International Journal of American Linguistics*, 79: 189–218.
- MacKay, Carolyn J. & Frank R. Trechsel. 2014. Diagnósticos morfológicos para la clasificación de las lenguas totonaco-tepehua. [Morphological disgnostics for the classification of Totonac Tepehua languages.] In Rebeca Barriga Villanueva & Ester Herrera Zendejas (eds.), *Lenguas, estructuras y hablantes: Estudios en homenaje a Thomas C. Smith-Stark*, 2: 843–70. Mexico City: El Colegio de México.
- MacKay, Carolyn J. & Frank R. Trechsel. 2015. Totonac-Tepehua genetic relationships. *Amerindia*, 37: 121–58.
- MacKay, Carolyn J. & Frank R. Trechsel. 2018a. An Alternative Reconstruction of proto-Totonac-Tepehua. *International Journal of American Linguistics*, 84(1): 51–92.

- MacKay, Carolyn J. & Frank R. Trechsel. 2018b. Una reconstrucción alternativa del prototonaco-tepehua. In Elsa Cristina Buenrostro, Lucero Meléndez Guadarrama & Marcela San Giacomo Trinidad (eds.), *Lingüística histórica de lenguas indomexicanas: hallazgos y discusiones recientes*, 85–123. Mexico: IIA-UNAM.
- Maddieson, Ian. 2010. Typology of phonological systems. In Jae Jung Song (ed.), *The Oxford handbook of linguistic typology*, 534–548. Oxford University Press, Oxford.
- Maddieson, Ian. 2013. Glottalized consonants. In Matthew S. Dryer & Martin Haspelmath (eds.), *The world atlas of language structures online*, Leipzig: Max Planck Institute for Evolutionary Anthropology. URL: <http://wals.info/chapter/7> (Last accessed on 2021-03-17).
- Maslova, Elena & Vladimir P. Nedjalkov. 2013. Reciprocal constructions. In Matthew S. Dryer & Martin Haspelmath (eds.), *The world atlas of language structures online*, Leipzig: Max Planck Institute for Evolutionary Anthropology. URL: <http://wals.info/chapter/106> (Last accessed on 2021-03-30).
- Mayer, Mercer. 1969. *Frog, where are you?* New York: Dial Press.
- McFarland, Teresa. 2009. *The phonology and morphology of Filomeno Mata Totonac*. Ph.D. dissertation, University of California, Berkeley.
- McFarland, Teresa. 2010. Ideophones and templatic morphology in Filomeno Mata Totonac. In Jan Wohlgemuth & Micheal Cysouw (eds.), *Rara and rarissima: Documenting the fringes of linguistic diversity*, 235–246. [Empirical approaches to language typology 46.] Berlin: De Gruyter Mouton.
- McGraw, Rachel. 2019. Interpreting language use in Ozelonacaxtla, Puebla, Mexico. *Language Documentation and Conservation*, 13: 112–154.
- McQuown, Norman A. 1940. *A grammar of Totonac*. Doctoral dissertation, New Haven: Yale University.
- McQuown, Norman A. 1942. Una posible síntesis lingüística macro-mayance. *Mayas y olmecas*. Segunda reunión de mesa redonda sobre problemas antropológicos de México y centro America, Sociedad Mexicana de Antropología. Tuxtla Gutiérrez, Chiapas, 2: 37–38.

- McQuown, Norman A. 1956. Evidence for a synthetic trend in Totonacan. *Language*, 32: 78–80.
- McQuown, Norman A. 1990. *Gramática de la lengua totonaca: Coatepec, Sierra Norte de Puebla*. Mexico City: Universidad Nacional Autónoma de México Press.
- Mithun, Marianne. 1997. Lexical affixes and morphological typology. In Joan Bybee, John Haiman, & Sandra A. Thompson (eds.), *Essays on language function and language type*, 357–371. Amsterdam: John Benjamins Publishing Co.
- Mithun, Marianne. 1998. The significance of diversity in language endangerment and preservation. In Lenore Grenoble and Lindsay Whalley (eds.), *Endangered languages: loss and community response*. Cambridge: Cambridge University Press. 163-191. Reprinted 2010 in Austin, Peter K. *Critical concepts in language studies*. Oxford, UK: Routledge.
- Mithun, Marianne. 1984. The evolution of noun incorporation. *Language*, 60 (4), 847–894.
- Mithun, Marianne. 2002a. An invisible hand at the root of causation: The role of lexicalization in the grammaticalization of causatives. In Ilse Wischer and Gabriele Diewald (eds.), *New reflections on grammaticalization*. Amsterdam: John Benjamins. 237-257.
- Mithun, Marianne. 2002b. Understanding and explaining applicatives. In Mary Andronis, Christopher Ball, Heidi Elston, and Sylvain Neuvel, (eds.), *Proceedings of the thirty-seventh meeting of the Chicago Linguistic Society: Functionalism and formalism in linguistic theory*. Chicago. 37(2):73-98.
- Montes Castañeda, Faustino. 2014. *Adquisición de la semántica de las raíces léxicas topológicas de contacto y separación: ‘poner (se)’ y ‘quitar (se)’ prendas de vestir en el totonaco de Santa Ana Chumatlán, Veracruz*. MA thesis, Centro de investigaciones y estudios superiores en Antropología Social.
- Mora-Marín, David F. 2016. Testing the proto-Mayan-Mije-Sokean hypothesis. *International Journal of American Linguistics*, 82: 125–80.

- Moore, Devin. 2016. Relative clauses in Coahuilán Totonac. *Oklahoma working papers in indigenous languages*, 2: 22–40.
- Moore, Devin. 2017. Subgrouping of Coahuilán Totonac. *Canadian Journal of Linguistics*, 62 (1): 84–117.
- Müller, André, Viveka Velupillai, Søren Wichmann, Cecil H. Brown, Eric W. Holman, Sebastian Sauppe, Pamela Brown, Harald Hammarström, Oleg Belyaev, Johann-Mattis List, Dik Bakker, Dmitri Egorov, Matthias Urban, Robert Mailhammer, Matthew S. Dryer, Evgenia Korovina, David Beck, Helen Geyer, Pattie Epps, Anthony Grant & Pilar Valenzuela. 2013. *ASJP world language trees of lexical similarity*, URL: <http://asjp.cild.org>
- Newman, John. 2002. *The linguistics of sitting, standing, and lying*. [Studies in typological linguistics 51]. Amsterdam & Philadelphia: John Benjamins.
- Newman, Paul. 2012. Pluractional verbs: An overview. In Patricia Cabredo Hofherr & Brenda Laca (eds.), *Verbal plurality and distributivity*, 185–210. Berlin, Boston: De Gruyter.
- Nichols, Johanna. 1986. Head-marking and dependent-marking grammar. *Language*, 62(1): 56–119.
- O'Meara, Carolyn, Susan Kung & Asifa Majid. 2019. The challenge of olfactory ideophones: Reconsidering ineffability from the Totonac-Tepehua perspective. *International Journal of American Linguistics*, 85: 173–212.
- Online Nahuatl Dictionary. 2020. *cihua* and *teutli*. In Stephanie Wood (ed.), *Online Nahuatl dictionary*, (Date accessed: 2020-11-24) URL: <https://nahuatl.uoregon.edu/>
- Overall, Simon E., Rosa Vallejos, & Spike Gildea. 2018. Nonverbal predication in Amazonia, *Typological Studies in Language*, 122. John Benjamin Publishing, Amsterdam.
- Palmer, Frank. (2001). *Mood and modality*. Cambridge: Cambridge University Press.

- Payne, Thomas. 2014. Toward a balanced grammatical description. In Toshihide Nakayama & Keren Rice (eds.), *The art and practice of grammar writing (Language Documentation & Conservation special publication No. 8)*, 91–108. Hawai'i: University of Hawai'i Press.
- Payne, Doris L. & Immanuel Barshi. 1999. External possession: What, where, how, and why. In Doris L. Payne & Immanuel Barshi (eds.), *External possession*, 3–29. Amsterdam: John Benjamins Publishing Co.
- Peterson, David. 2007. *Applicative constructions*. Oxford: Oxford University Press.
- Polinsky, Maria. 2013. Applicative constructions. In Matthew S. Dryer & Martin Haspelmath (eds.), *The world atlas of language structures online*, Leipzig: Max Planck Institute for Evolutionary Anthropology. URL: <http://wals.info/chapter/109> (Last accessed on 2021-04-07).
- Polinsky, Maria. 2013. Antipassive constructions. In Matthew S. Dryer & Martin Haspelmath (eds.), *The world atlas of language structures online*, Leipzig: Max Planck Institute for Evolutionary Anthropology. URL: <http://wals.info/chapter/108> (Last accessed on 2021-03-31).
- Puderbaugh, Rebekka. 2015. Contextual effects on the duration of ejective fricatives in Upper Necaxa Totonac. *Proceedings of the 18th international congress of phonetic sciences (ICPhS XVIII)*, Glasgow, 931–934.
- Puderbaugh, Rebekka. 2016. Acoustic characteristics of obstruents in Huehuetla Tepehua. *Journal of the Canadian Acoustical Association*, 44(3): 140–141.
- Puderbaugh, Rebekka. 2019. *Laryngealization in Upper Necaxa Totonac*. Ph.D., Dissertation, University of Alberta.
- Puderbaugh, Rebekka & Benjamin V. Tucker. 2013. Acoustic features of Upper Necaxa Totonac ejective fricatives. *The Journal of the Acoustical Society of America*, 134(5): 4200.
- Quirk, Randolph, Sidney Greenbaum, Geoffrey Leech, & Jan Svartvik. 1985. *A comprehensive grammar of the English language*. London: Longman.

- Reid, Aileen A. 1979. Dynamics of reported speech in Totonac. In Linda K. Jones (ed.), *Discourse studies in Mesoamerican languages*, 1: 293–328. Dallas/Arlington: Summer Institute of Linguistics & University of Texas.
- Reid, Aileen A. 1991. Gramática totonaca de Xicotepec de Juarez, Puebla. *Gramáticas de lenguas indígenas de México* 8. Mexico, D.F.: Summer Institute of Linguistics.
- Reid, Aileen A. & Ruth G. Bishop. 1974. *Diccionario totonaco de Xicotepec de Juarez*. [Serie de Vocabularios y diccionarios indígenas “Mariano Silva & Aceves” 17.] Mexico, D.F.: Summer Institute of Linguistics.
- Reid, Aileen A., Ruth G. Bishop, Ella M. Button & Robert E. Longacre. 1968. *Totonac from clause to discourse*. Summer Institute of Linguistics publications in linguistics and related fields 17. Norman, Oklahoma: University of Oklahoma.
- Rice, Sally. 2002. Posture and existence predicates in Dene Suliné (Chipewyan): Lexical and semantic density as a function of the SIT/STAND/LIE continuum. In John Newman (ed.), *The Linguistics of sitting, standing, and lying*, 61–78. Amsterdam/Philadelphia: John Benjamins.
- Rice, Sally. 2012. Our language is very literal: Figurative expression in Dene Suliné [Athapaskan]. *Endangered metaphors*, In A. Idstrom & E. Piirainen (eds.), 21-76. Amsterdam/Philadelphia: John Benjamins.
- Rice, Sally & Kaori Kabata. 2007. Cross-linguistic grammaticalization patterns of the ALLATIVE. *Linguistic Typology* 11: 453-516.
- Román Lobato, Gabriela. 2008. *La juntura fonológica en el totonaco de Ozelonacaxtla, Huehuetla, Puebla*. MA thesis, Centro de investigaciones y estudios superiores en antropología social.
- Santiago Francisco, José. 2009. *Colores y olores: Un estudio lingüístico entre los totonacos de Filomeno Mata, Veracruz*. BA thesis, Universidad Veracruzana.
- Santiago Francisco, José. 2012. *Contacto lingüístico español-totonaco en Filomeno Mata, Veracruz*. MA thesis, Centro de investigaciones y estudios superiores en antropología social.

- Santiago Francisco, José. 2018. *El aprendizaje del lenguaje como parte de la historia de desarrollo de la persona entre los totonacos de Filomeno Mata, Veracruz. Kataxtu "koko, katanu "tachiwin*. PhD dissertation. Universidad Veracruzana.
- Santiago Francisco, José & Miguel Figueroa Saavedra. 2016. El desuso de los números y los clasificadores numerales en la lengua totonaca entre los jóvenes de Filomeno Mata, Veracruz (México). *UniverSOS revista de lenguas indígenas y universos culturales*, 13: 239–257.
- Siewierska, Anna. 2013. Order of person markers on the verb. In Matthew S. Dryer & Martin Haspelmath (eds.), *The world atlas of language structures online*, Leipzig: Max Planck Institute for Evolutionary Anthropology. URL: <http://wals.info/chapter/104> (Last accessed on 2021-03-29.)
- Smith-Stark, Thomas C. 1982. *Mesoamerican calques*. Presentation: Symposium on Mesoamerican dialectology and language history, 44th international congress of Americanists, Manchester, England.
- Smith-Stark, Thomas C. 2005. Phonological description in New Spain. *Missionary linguistics, II/Lingüística misionera, II: Orthography and phonology*. Amsterdam, Netherlands: Benjamins, 3–64.
- Smythe, Susan. 2000. *Vocalic and uvular phonemes in Huehuetla Tepehua: The acoustic evidence*. Ms, University of Texas at Austin.
- Smythe, Susan. 2003. Reconstructing lost phonemes in Huehuetla Tepehua using “affectionate speech”. In Inger Mey, Ginger Pizer, Hsi-Yao Su, & Susan Szmania (eds.), *Texas linguistic forum 45, SALSA 10*: 167–176. Austin: University of Texas Linguistics Department.
- Snoek, Conor & Sally Rice. 2019. *Metonymic trends in Dene ways of speaking*. Dene languages conference, University of California Davis, California, July 6-7, 2019.
- Stassen, Leon. 2013. Zero copula for predicate nominals. In Matthew S. Dryer & Martin Haspelmath (eds.), *The world atlas of language structures online*, Leipzig: Max Planck Institute for Evolutionary Anthropology. URL: <http://wals.info/chapter/120> (Last accessed on 2021-03-16).

- Stresser-Péan, Guy. 2009. *The sun God and the savior: The christianization of the Nahua and Totonac in the Sierra Norte de Puebla, Mexico*. Boulder, Colorado: University Press of Colorado.
- Swadesh, Morris. 1954. Perspectives and problems of Amerindian comparative linguistics, *WORD*, 10(2-3): 306–332.
- Swadesh, Morris. 1955. Towards greater accuracy in lexicostatistic dating. *International Journal of American Linguistics*, 21(2):121–137.
- Swadesh, Morris. 1961. Algunos reflejos de la prehistoria de Chiapas. *VIII Mesa redonda. Los Mayas del sur y sus relaciones con los nahuas meridionales*, 145–59. Mexico.
- Talmy, Leonard. 1978. Figure and ground in complex sentences. *Universals of Human Language*, 4: 627–649.
- Talmy, Leonard. 2000. *Toward a cognitive semantics I: Concept structure systems*. Massachusetts: the MIT Press.
- Thompson, Sandra. 1988. A discourse approach to the cross-linguistic category “adjective”. *Explaining language universals*, ed. John A. Hawkins, 167–185. Oxford: Blackwell.
- Tino Antonio, Jorge. 2006. *El uso infantil de los verbos de postura corporal con función locativa en Totonaco de Olintla, Puebla*. MA thesis, Centro de investigaciones y estudios superiores en antropología social.
- Tino Antonio, Jorge. 2020. Las vocales laringizadas y su manifestación fonética en el totonaco de Olintla. *Lingüística Mexicana, Nueva Época* 2(1): 7–30.
- Trechsel, Frank R. & Alice Faber. 1992. *Acoustic properties of plain and laryngealized vowels in the Misantla dialect of Totonac*. MS thesis, Universidad de las Américas-Puebla, Mexico.
- Troiani, Duna. 1989. *Relatos totonacos de la Sierra, Huehuetla, Puebla*. [Supplément 2 au n° 14 d'Amerindia, Série Chantiers Amerindia.] Paris: Association d'Ethnolinguistique Amérindienne.

- Troiani, Duna. 2004. *Aperçu grammatical du totonaque de Huehuetla, Puebla, Mexico*. Munich: Lincom Europa.
- Varela, Vianey & Ryan Klint. 2006. The ribbon sits on the candle's shin: the acquisition of basic locative constructions in Upper Necaxa Totonac. In Atsushi Fujimori & Maria Amelia Reis Silva (eds.), *Proceedings of the 11th workshop on structure and constituency in the languages of the Americas*, Vancouver: UBC Working Papers in Linguistics.
- Velupillai, Viveka. 2012. *An introduction to linguistic typology*. John Benjamins Publishing.
- Watters, James K. 1980. Aspects of Tlachichilco Tepehua (Totonacan) phonology. *SIL-Mexico workpapers*, 4:85–129.
- Watters, James K. 1987. Underspecification, multiple tiers, and Tepehua phonology. In Anna Bosch, Barbara Need & Eric Schiller (eds.), *Papers from the 23rd annual regional meeting of the Chicago Linguistic Society*, 23: 338–402. Chicago: Chicago Linguistic Society.
- Watters, James K. 1988. *Topics in Tepehua grammar*. Doctoral dissertation. University of California, Berkeley.
- Watters, James K. 1996a. Frames and the semantics of applicatives in Tepehua. *Cognitive linguistics in the Redwoods*, 971–996. Berlin, Boston: De Gruyter Mouton.
- Watters, James K. 1996b. The Interpretation of deverbal nouns in Tepehua. In Masayoshi Shibatani & Sandra A. Thompson (eds.), *Grammatical constructions: Their form and meaning*, 323–339. Oxford: Clarendon Press.
- Watters, James K. 2007. Tepehua verb morphology, operator scope, and the encoding of arguments. In Lilián Guerrero, Sergio Ibáñez Cerda & Valeria A. Belloro (eds.), *Studies in role and reference grammar*, 247–268. Mexico: Universidad Nacional Autónoma de México.

- Watters, James K. 2010a. Prólogo. Tepehua de Pisaflores, Veracruz. In Carolyn J. MacKay & Frank R. Trechsel (eds.), *Archivo de lenguas indígenas de México 30*, México, D.F.: Colegio de México, 11–21.
- Watters, James K. 2010b. *Phrase-final glottals in Tlachichilco Tepehua*. Presentation: Annual meeting of the society for the study of the indigenous languages of the Americas (SSILA), Baltimore.
- Watters, James K. 2013. Transitivity, constructions, and the projection of argument structure in RRG. Linking constructions into functional linguistics. In Brian Nolan & Elke Diedrichsen (eds.), *The role of constructions in grammars* [Studies in language companion series 145], 23–40. Amsterdam: John Benjamins.
- Watters, James K. 2017a. Tlachichilco Tepehua: Semantics and function of verb valency change. In A. Alvarez González, & I. Navarro (eds.), *Verb valency changes: Theoretical and typological perspectives*, 166–192. John Benjamins Publishing Company.
- Watters, James. 2017b. Verb-verb compounds and argument structure in Tepehua. In Brian Nolan & Elke Diedrichsen (eds.), *Argument realisation in complex predicates and complex events: Verb-verb constructions at the syntax-semantic interface*, [Studies in language companion series 180], 277–303.
- Watters, James K. 2018. Sobre la relación histórica entre las vocales laringizadas y las eyectivas en totonacotepehua. In Elsa Cristina Buenrostro, Lucero Meléndez Guadarrama, Marcela San Giacomo (eds.), Trinidad, *Lingüística histórica de lenguas indomexicanas: hallazgos y discusiones recientes*, 125–138. IIA-UNAM: México.
- Westley, David O. 1991. *Tepetotutla Chinantec syntax: Studies in Chinantec languages 5*. Dallas: Summer Institute of Linguistics and the University of Texas at Arlington.
- Whorf, Benjamin L. 1935. The comparative linguistics of Uto-Aztecan. *American Anthropologist*, 37: 600–608.
- Wilkins, David. 1996. Natural tendencies of semantic change and the search for cognates. In M. Durie & M. Ross (eds.), *The comparative method reviewed*, 264–304. New York/Oxford: Oxford University Press.
- Witkowski, Stanley R. & Cecil H. Brown. 1978. Mesoamerican: A proposed language phylum. *American Anthropologist*, 80: 942–44.

Appendix A: Archive of Textual and Audio Data

This appendix presents a list of the documentary materials in the textual and audio archive used in this dissertation. The first column lists the title, or topic of recording, followed by a title ID, the speaker's initials, the length of audio recording, and the method of elicitation. The title ID followed by a colon (:) and the speaker's initials is used throughout the examples in this dissertation in reference to where the information may be found along with the line number in the textual database.

Table 66: Archive of textual and audio data

Title ID	Speaker ID	Duration hr:min:sec	Transcribed & Analyzed	Elicitation Method
Elicitations				
MacKay and Trechsel Questionnaire	FAS	23:34:00	All	Translation
	AAV	06:24:00	All	
	TDV	02:32:00	All	
	MGO	00:08:00	All	
	RLP	04:15:00	All	
	AAV	00:34:00	All	
	RLP	00:55:00	All	
	JHO	00:47:30	All	
	MCC	01:15:00	All	
	AST	01:18:00	All	
Dynamic and Stative Verb Paradigms	FAS	03:02:36	All	Translation
	MPC	-		
Adjectives and Adverbs	FAS	-	All	
	MCC	-		
Adverbs and Ideophones	FAS	00:51:00	All	
	MCC	00:40:00	All	
Applicatives, Relative/ Complement Clauses	FAS	00:40:15	All	
Nominal derivations and	FAS	02:01:00	All	

imperatives					
Meso-Space Project	FAS	02:00:00	All	Picture stimuli	
	RLP	-			
Topological Relations Picture Series [TRPS]	FAS	02:02:00	All		
	RLP	01:43:00			
	MCC	-			
Wordlist (100 items)	FAS	00:40:20	All		Translation & Recitation
	AAV	00:34:00			
	RLP	00:55:00			
	JHO	00:47:30			
	MCC	01:15:00			
	AST	01:18:00			
Cut and Break	FAS	00:56:00	Transcribed; partially analyzed	Video stimuli	
	MPC	00:37:38	None		
	MCC	01:11:33	None		
Cut and Break II	FAS	01:10:35	None		
Put Project	MCC	00:52:39	None		
	FAS	00:33:31	None		
Reciprocal Constructions and Situation Type	MCC	00:55:36	Partially transcribed and analyzed		
Staged Events	MCC	00:35:57	None		
Narratives					
Woodchopper	FAS	00:03:00	All	Storyboard stimuli	
Chameleon	RLP	00:04:50	All		
Shopping List	FAS	00:03:30	All		
Frog Story	FAS	00:06:00	All		
	MCC	00:08:30	All		
Cuento de la bruja [Witch Story]	FDV	00:11:00	All	Prompted Narratives	
	TT	00:03:20	All		
	MCC	00:01:08	All		

Los Voladores	SLO	00:01:07	All	
Cuento de una Abuelita	RVA	00:10:10	All	
Story of the past	MCC	00:01:35	All	
Cuentos de un Abuelito	SLO	00:24:06	All	
La Llorona	MCC	00:01:07	All	
Story of the Community	Name Unknown	00:19:00	All	
A murder long ago	MCC	00:01:55	Transcribed	
A personal encounter	MCC	00:01:02	Transcribed	
Matilde's day	MCC	00:04:38	Transcribed	
Matilde's dinner	MCC	00:00:59	Transcribed	
Cuento de Zihuateutla	FDV	00:06:00	Transcribed	
How to make tamales	MCC	00:01:46	Transcribed	Procedural texts
How to pick frijoles	MCC	00:01:35	Transcribed	
Sacred Places	FDV	00:09:00	Transcribed	Expository text

Appendix B: Minimal and Near-Minimal Pairs in ZT

This appendix illustrates some minimal or near minimal pairs for consonants and vowels in ZT. While there are not many minimal pairs, the examples may illustrate some of the proposed phonemic contrasts.

Minimal and Near-minimal pairs in ZT

Consonants

/p/ ~ /q/

<i>cha'qá:n</i>	[tʃa'qan]	'interior'
<i>cha'pán</i>	[tʃa'pan]	'mill'

<i>pó'qo'</i>	['pɔqɔ]	'stomach'
<i>qó:'qo'</i>	['qɔ:'qɔ]	'mute person'

/q/ ~ /k/

<i>sqá'ta'</i>	['sqata]	'child'
<i>ská:ta'</i>	['ska:ta]	'lice'

/q/ ~ /x/

<i>xaj</i>	[ʃax]	'raindrop falling (IDPH)'
<i>xaq</i>	[ʃaq]	'temazcal'

<i>chojót</i>	[tʃo'χot]	'spit'
<i>cho'qó</i>	[tʃo'qo]	's/he stays'

<i>chejé:t</i>	[tʃe'χe:t]	'hail'
<i>che'qé:'</i>	[tʃe'qe:]	'wash'

/k/ ~ /j/

<i>kokúj</i>	[ko'kux]	'sand'
<i>koyúj</i>	[ko'jux]	'armadillo'

/k/ ~ /t/ ~ /n/

<i>chik</i>	[tʃik]	'house'
<i>chin</i>	[tʃin]	'arrive'
<i>chi't</i>	[tʃit]	'mill'

/s/ ~ /tz/

<i>sa'sán</i>	[sɑ'san]	'skunk'
<i>tza'tzá'n</i>	[tsɑ'tsɑn]	'corn cob'

/tz/ ~ /tʃ/

<i>tzi'tzi'</i>	['tsjtsi]	'warm'
<i>chi'chi'</i>	['tʃitʃi]	'hot'

/t/ ~ /t̥/	<i>wa:'lh</i> <i>wa:'t</i>	[wɑ:t̥] [wɑ:t]	'ate' 'tamale'
	<i>lhonklhonk</i> <i>tonktonk</i>	[t̥ɔŋk̥t̥ɔŋk] [t̥ɔŋkt̥ɔŋk]	'snoring (IDPH)' 'pulse of wrist pumping (IDPH)'
/t̥/ ~ /t̥f/	<i>tli:lh</i> <i>chi:lh</i>	[t̥li:t̥] [t̥ʃi:t̥]	'danced' 'tied up'
/t̥/ ~ /t̥h/	<i>tlululu</i> <i>lhululu</i>	[t̥lululu] [t̥ululu]	'stomach grumbling' 'person slurping a drink'
/l/ ~ /t/	<i>la'qa'tí</i> <i>laqalí:</i>	[laq̣a'ti] [laq̣a'li:]	'like' 'tomorrow'
/m/ ~ /n/	<i>li:mí:n</i> <i>li:ní:n</i>	[li:'mi:n] [li:'ni:n]	'bring' 'dead'
/j/ ~ /w/	<i>chuwá:</i> <i>chuyá:</i>	[t̥ʃu'wa:] [t̥ʃu'ja:]	'now, today' 'crazy'
Vowels			
/i:/ ~ /u:/	<i>tli:</i> <i>tlu:</i>	[t̥li:] [t̥lu:]	'dance' 'do'
/e/ ~ /o/	<i>cho'qó</i> <i>che'qé:</i>	[t̥ʃo'qo] [t̥ʃe'qe:]	'stay' 'wash'
/i:/ ~ /a:/	<i>yi:</i> <i>ya:</i>	[ji:] [ja:]	'harvest' 'stand'
/a:/ ~ /u:/	<i>qe:pá:n</i> <i>qe:pú:n</i>	[qe:'pa:n] [qe:'pu:n]	'wall' 'exterior'
/i/ ~ /ĩ/	<i>chichí'</i> <i>chí'chi'</i>	[t̥ʃĩ't̥ʃĩ] ['t̥ʃĩt̥ʃĩ]	'dog' 'hot'
/i/ ~ /i:/	<i>tantín</i> <i>tantí:n</i>	[tan'tin] [tan'ti:n]	'excrement' 'defecate'
/ĩ/ ~ /ĩ:/	<i>chi:</i> <i>chi:'</i>	[t̥ʃi:] [t̥ʃĩ:]	'how, what' 'tie'

	<i>lakapí'n</i>	[laka'pɪn]	'stuffed tortilla'
	<i>lakapí:n</i>	[laka'pi:n]	'cheek'
/a/ ~ /ã/			
	<i>páxa</i>	['paʃa]	'bathe'
	<i>páxa'</i>	['paʃã]	'you bathe'
/ã/ ~ /ã:/			
	<i>wa'</i>	[wã]	'eat'
	<i>wa:'</i>	[wã:]	'this here'
	<i>cha'n</i>	[tʃãn]	'plant'
	<i>cha:'n</i>	[tʃã:n]	'arrive'
/a/ ~ /ã:/			
	<i>maqán</i>	[ma'qan]	'hand'
	<i>maqá:'n</i>	[ma'qɑ̃:n]	'throw'
/a/ ~ /a:/			
	<i>lhkáka'</i>	['lkakɑ̃]	'spicy, hot'
	<i>lhká:ka'</i>	['lka:kɑ̃]	'measure'
/u/ ~ /u:/			
	<i>tá'qnu'</i>	['taqnu]	'hat'
	<i>ta'qnú:</i>	[taq'nu:]	'put on head'

Appendix C: List of derivational affixes and some of their functions in ZT

Derivational affixes			Valency- increasing	Valency- decreasing	Adverbial modifier
Causative	CS	<i>ma:- nV:</i>	Yes	No	No
Stimulus	STM	<i>maq-</i>	Yes	No	No
Benefactive	DAT	<i>-ni(')</i>	Yes	No	No
Instrumental	INST	<i>li:-</i>	Yes	No	No
Comitative	CMT	<i>ta:'-</i>	Yes	No	No
Allative	ALL	<i>laq-</i>	Yes	No	No
Decausative	DCS	<i>ta-</i>	No	Yes	No
Alienative	ALN	<i>maq-</i>	sometimes	No	No
Body-part terms	various	various	some	No	Yes
Adverbial Affixes					
Intensifier	INTNS	<i>lak-</i>	No	No	Yes
Repetitive	RPT	<i>-pala</i>	No	No	Yes
Totalitative	TOT	<i>-qo</i>	No	No	Yes
Distal	DIST	<i>-cha</i>	No	No	Yes
Proximal	PRX	<i>-chi</i>	No	No	Yes
Ambulative	AMB	<i>-te:lha</i>	No	No	Yes
Path	PATH	<i>te:-</i>	No	No	Yes
Roundtrip	RT	<i>ki:-</i>	No	No	Yes
Desiderative	DSD	<i>-kutún</i>	No	No	Yes

Appendix D: Summary of linguistic features shared by ZT and the Mesoamerican linguistic area

Linguistic features shared by languages spoken in the Mesoamerican linguistic area in Campbell et al. (1986) in comparison to their presence in Zihuateutla Totonac. The + indicates the presence of the linguistic feature in ZT while a – represents its absence.

Linguistic features	Zihuateutla Totonac
Nominal possession ('her-N the N')	+
Relational nouns	+
Vigesimal numeral system	+
Basic word order: no SOV orders	+
Absence of switch-reference	+
Inalienable possession of body-part and kin terms	+
Locatives derived from body-part terms	+
Absolutive nominal affixes	–
Absence or limited occurrence of 'plural' markers on nouns	+
Numeral classifiers	+
Noun incorporation	–
Body-part incorporation	+
Verbal directional affixes	+ (roots)
'Aspect' more important than 'tense'	+
Inclusive vs. exclusive pronominal forms	– (only in verbal forms)
'Zero' copula	+
Pronominal copular constructions with affixes	–
Absence of a verb 'to have'	–
Final devoicing of sonorants	+
Voicing of obstruents after nasals	–
Vowel harmony	+
Presence of stress rule: $V > \acute{V} / _ C(V)\#$	+
Contrastive voiced stops	–
Contrastive voiced fricatives	–
Presence of the lateral affricate (<i>tl</i>)	+
Presence of uvulars (<i>q, χ</i>)	+
Presence of aspirated stops and affricates	–
Presence of glottalized consonants	–
Contrastive tones	–
Presence of retroflexed fricatives and affricates	–
Presence of a central vowel (/i/ or /ə/)	–

Appendix E: Sample of Texts

This appendix presents four texts by three different speakers. The first text is a personal history by Regina Villegas Andrade, an elderly woman who is known in the community for her specialized knowledge in plants and their medicinal uses. In this text, Regina reminisces about her past and present life. Regina's granddaughter, Fabiola Andrade Santiago, told the next two stories, which were elicited using storyboards: The Frog Story by Mayer (1969) is about a little boy who loses his frog and goes out to search for it accompanied by his dog. The Woodchopper (TFS Working Group 2011) is a short story of a man who goes out to get wood to make a fire for his wife but a certain event led to different consequences. The final story is told by Raymundo Lechuga Perez. This story, The Chameleon, was also elicited from the TFS Working Group (2012) and is about a chameleon named Jesus who has trouble changing the color of his skin.

Cuentos de una Abuelita by Regina Villegas Andrade

The translation presented here is by her granddaughter Fabiola Andrade Santiago.

ID: RVA Cuentos

1. *wa'chí' xkiwaní kina:ná' i'xna:ná'*
 wa'chí' i'x-kin-wan-ni kin-na:ná' i'x-na:ná'
 like.that PST-1OBJ-say-DAT 1POSS-grandmother 3POSS-grandmother
 'Like that is how my grandmother, her grandmother, used to tell me.'

2. *i'xpu:taxtunín kina:ná' i'xlán ti:'x pu:wí'ti' i'xna:ná'*
 i'x-pu:-ta-xtu-nin kin-na:ná' i'x-la-n
 PST-CNTR-INCH-out-AP 1POSS-grandmother PST-be=JUNCT

 ti: i'x-pu:wí'ti' i'x-na:ná'
 HREL 3POSS-in.law 3POSS-grandmother
 'My grandmother used to go out; my grandmother, who was the mother-in-law of her grandmother.'

3. *kintzí:t i'xna:ná' kintzí:t mat*
 kin-tzi:t i'x-na:ná' kin-tzi:t mat
 1POSS-mother 3POSS-grandmother 1POSS-mother QTV
 'My mother, her grandmother, my mother'

4. *naka'qapixáni' xtatawá'ka' ta:'tatzé:'qa*
 nak=a'qapixán-ni' i'x-ta-ta-wá'ka' ta: '-ta-tze:'q-a
 LOC-loft-PL PST-3PL-INCH- be.high.up CMT-DCS-hidden-IMPF
 'They climbed up on the lofts to hide together.'

5. *kina:ná' i'xa'n ka:'takúxtu' i'xtzi:'t e:' i'xta:tá'*
 kin-na:ná' i'x-a'n ka:'-ta-kúxtu' i'x-tzi:'t
 1POSS-grandmother PST-go PLC-DCS-weed:DVB 3POSS-mother
 e:' i'x-ta:tá'
 and 3POSS-father
 'My grandmother used to go to the corn field with her mother and father.'
6. *a'qapixán a'kxníka' mat i'xchín i'xtzi:'t e:' i'xta:tá' i'xtata:'ktá naka'qapixán*
 a'qapixán a'kxníka' mat i'x-chín i'x-tzi:'t e:'
 loft when QTV PST-arrive 3POSS-mother and
 i'x-ta:tá' i'x-ta-ta:'ktá nak=a'qapixán
 3POSS-father PST-3PL.SUB-come.down LOC=loft
 'When their mother and father arrived at the loft, they would come down from the loft.'
7. *mat xtasianqá'n*
 mat i'x-ta-sianqá'n
 QTV PST-3PL.SUB-be.afraid
 'They were afraid.'
8. *mat i'xtaqe:xtukú i'xchiká'n*
 mat i'x-ta-qe:-xtukú i'x-chik-ka'n
 QTV PST-3PL.SUB-back-close 3POSS-house-PL.POSS
 'They closed the door to their houses.'
9. *i'xtaá'n naka:'takúxtu' kinta:'tá' i'xna:ná' kintzi:'t*
 i'x-ta-a'n nak=ka:'-ta-kúxtu' kin-ta:'tá'
 PST-3PL.SUB-go LOC=PLC-DCS-weed:DVB 1POSS-father
 i'x-na:ná' kin-tzi:'t
 3POSS-grandmother 1POSS-mother
 'They went to the mountains, my father and her grandmother, my mother.'
10. *i'xtaá'n taskúja i'xtaá'n ka:'takúxtu'*
 i'x-ta-a'n ta-skuj-a i'x-ta-a'n ka:'-ta-kúxtu'
 PST-3PL.SUB-go 3PL.SUB-work-IMPF PST-3PL.SUB-go PLC-DCS-weed:DVB
 'They used to go to work; they used to go to the cornfields.'

11. *chi: a:'maqtu'tún qo:tanú: i'xtatzukú tatasá misiní:'n*
 chi: a:'maq-tu'tún qo:tanú: i'x-ta-tzukú
 PTCL ADD-NUM.CLF-three afternoon PST-3PL.SUB-begin
 ta-tasá misin-ní:'n
 3PL.SUB-scare jaguar-PL
 'At three in the afternoon, they began scaring the jaguars.'
12. *misín li:jikwa'ní:'ti misín lakta:lhma:n mat misín*
 misín li:-jikwan-ni:'t=i misín lak-ta:lhma:n mat misín
 jaguar INST-scare-PF=JUNCT jaguar APL-tall QTV jaguar
 'The jaguars have frightened people; it's said the jaguars are tall.'
13. *lakí'lha chu:ntzá: mat i'xlakanká'n misiní:'n*
 lak-kí'lha chu:ntzá: mat i'x-lakan-ka'n misin-ní:'n
 APL-round like.this QTV 3POSS-face-PL.POSS jaguar-PL
 'The jaguar's faces are round like this.'
14. *mat a'kxníka' i'xtzukú tata'sá mat i'xta:'tatzé:'q i'xna:ná' kintzi:'t*
 mat a'kxníka' i'x-tzukú ta-ta'sá mat i'x-ta:'-ta-tzé:'q
 QTV when PST-begin 3PL.SUB-roar QTV PST-CMT-DCS-hide
 i'x-na:ná' kin-tzi:'t
 3POSS-grandmother 1POSS-mother
 'When (the jaguars) began to roar, it's said she hid with him, her grandmother, my mother.'
15. *mat i'xa'nkán ka:'takúxtu' i'xa'nkán skujkán xlaká'n i'xta:'tatze:'qatzá'*
 mat i'x-a'n-kan ka:'-ta-kuxtú i'x-a'n-kan skuj-kán xlaká'n
 QTV PST-go-IDF PLC-DCS-weed:DVB PST-go-IDF go-IDF PRN.3PL
 i'x-ta:'-ta-tze:'q-a=tza'
 PST-CMT-DCS-hide-IMP=now
 'They went to the corn fields; they went to work, and they used to hide together in the field.'
16. *wa'chí' i'xwán kina:ná' wa'chí' i'xkiwani kina:ná'*
 wa'chí' i'x-wan kin-na:ná' wa'chí' i'x-kin-wan-ni
 like.this PST-say 1POSS-grandmother like.this PST-1OBJ-say-DAT
 kin-na:ná'
 1POSS-grandmother
 'Like this my grandmother said, like this my grandmother told me.'

17. *kit a'kxni' i'ksta'kli' xkima'aqchi'qó:n kina:ná'*
 kit a'kxni' i'k-sta'k-li' i'x-kin-ma'aqcho'qó:'≡n
 PRN.1SG when 1SG.SUB-grow-PFV PST-1OBJ-stroll≡JUNCT
 kin-na:ná'
 1POSS-grandmother
 'When I grew up, my grandmother used to take me for a stroll.'
18. *i'xkilé:'nin nak nak nakpú:xqa' kina:ná' e:' i'xwi: laqatín kinpi:pí'*
 i'x-kin-le:'n≡in nak=pú:xqa kin-na:ná'
 PST-1OBJ-take≡JUNCT LOC=river 1POSS-grandmother
 e:' i'x-wi: laqa-tin kin-pi:pí'
 and PST-sit NUM.CLF-one 1POSS-older.sister
 'My grandmother used to take me to the river and my older sister was there.'
19. *i'xwán katawilaqe:'títi' nawa'yaná:uj ki:chi'panán i'xta:tá' kilakstín*
 i'x-wan ka-ta-wilá-qe:'-tit≡i na-wa'yán-a:-uj
 PST-say OPT-INCH-sit-TOT-2PL.SUB≡JUNCT FUT-eat-IMP-1PL.SUB
 ki:-chi'pá-nan i'x-ta:tá' kin-lakstín
 RT-catch-AP 3POSS-father 1POSS-children
 'She said you all sit down and we will eat. The father of my children used to go fishing.'
20. *li:jikwá' chi: li:miní a'qachóq acamayás pescados*
 li:jikwá' chi: li:-min-ni a'qachóq acamayás pescados
 scary PTCL INST-come-DAT crayfish crayfish fish
 'It is scary how he brought crayfish and fish.'
21. *nali:pina:tít nali:wa'yatít i'xwán kimpí:pí'*
 na-li:-pin-a:-tít na-li:-wa'yan-tít
 FUT-INST-go:2SUB-IMP-2PL.SUB FUT-INST-eat-2PL.SUB
 i'x-wan kin-pi:pí'
 PST-say 1POSS-older.sister
 'My older sister would say you all are going to eat.'
22. *Teresa i'xwani'kán kinpi:pí'*
 Teresa i'x-wan-ni'-kan kin-pi:pí'
 Teresa PST-say-DAT-IDF 1POSS-older.sister
 'My older sister's name is Teresa.'

23. *i'ka:laqalhu:ma:náni*
 i'k-ka:-laqalhu:ma:n-nan≡i
 1SG.SUB-PL.OBJ-love.sb-ST.PL≡JUNCT
 'I love them.'
24. *lha: kila:ta:'latulakutuná:uj lha:tzá' kapintí't namín chiká'n*
 lha: kin-la:-ta:'-la-tula-kutun-a:-uj
 NEG 1OBJ-RCP-CMT-be-sit-DSD-IMPF-1PL.SUB

 lha:=tza' ka-pin-ti't na-min chik-ka'n
 NEG=now OPT-go:2SUB-2PL.SUB FUT-come house-PL.POSS
 'You all don't want to live with me. Do not go to your houses!'
25. *a:'tzá:' kalhtatátit pero juesa i'xmín kina:ná'*
 a:'tzá:' ka-lhtatá-tit pero juesa i'x-min kin-na:ná'
 here OPT-sleep-2PL.SUB but obligation PST-come 1POSS-grandmother
 'You all sleep here! But my grandmother used to come.'
26. *xkili:miní xaqa'tla'tzá' asenet a'kxníka' wa'chí' i'kli:sta'kní:t*
 i'x-kin-li:-min-ni xa-qá'tla'=tza' asenet a'kxníka'
 PST-1OBJ-INST-come-DAT DTV-big=now type.of.fruit(?) when

 wa'chí' i'k-li:-sta'k-ni:t
 seem 1SG.SUB-INST-grow-PF
 'She used to bring me big fruit; that's how I had grown up.'
27. *li:púj li:púj juésa i'kli:sta'kní:t*
 li:púj li:púj juésa i'k-li:-sta'k-ni:t
 sad sad obligation 1SG.SUB-INST-grow-PF
 'It is sad, it is sad the way I have grown up.'
28. *lha: cha: nu: li:púj*
 lha: cha: nu: li:púj
 NEG PTCL no sad
 'It's not that sad.'
29. *i'xa'nán tu: wa'kán i'xa'nán kú'xi' i'xa'nán stapú:n i'xa'nán pa'qlhchú'*
 i'x-a'nán tu: wa'-kan i'x-a'nán kú'xi' i'x-a'nán stapú:n
 PST-exist NREL eat-IDF PST-exist corn PST-exist beans

 i'x-a'nán pa'qlhchú'
 PST-exist tomatoes
 'There was food to eat; there was corn; there were beans; there were tomatoes.'

30. *pi'n kulá:ntu' sawát ka:kán sandía melón nípxi' tachá'ni' i'xa'nanqó:*
 pi'n kulá:ntu' sawát ka:kán sandía melón nípxi'
 chili cilantro quelite papalo watermelon melon squash
- tachá'ni' i'x-a'nán-qo:
 pumpkin PST-exist-TOT
 'There was everything: chili, cilantro, quelite, papalo, watermelon, melon, pumpkin, and chayotes.'
31. *kit kinta:tá' i'xcha'ni:'t cha'nkát*
 kit kin-ta:tá' i'x-cha'n-ni:'t cha'nkát
 PRN.1SG 1POSS-father PST-plant-PF sugarcane
 'I, my father had planted sugarcane.'
32. *i'xchi'tnín i'xtlawá conserva*
 i'x-chi't-nin i'x-tlawá conserva
 PST-mill-AP PST-make preserves
 'He used to mill (the sugarcane) and make preserves.'
33. *kintzi:t i'xta'qá chauj*
 kin-tzi:t i'x-xta'qá chauj
 1POSS-mother PST-make.tortilla tortilla
 'My mother used to make tortillas.'
34. *kintzi:'t i'xski'tí i'xmaxki:kán tasá:kwa'*
 kin-tzi:'t i'x-ski'tí i'x-maxki:-kan tasá:kwa'
 1POSS-mother PST-make.tortilla PST-give-IDF:IMPF peon
 'My mother made tortillas and (the tortillas) were given to the peones.'
35. *tankáuj tankaujkitzís chi: i'xma:xki:kán kintzi:'t tasá:kwa'*
 tan-kauj tan-kauj-kitzís chi: i'x-ma:xki:-kan kin-tzi:'t
 NUM.CLF-ten NUM.CLF-ten-five PTCL PST-give-IDF 1POSS-mother
- tasá:kwa'
 peones
 'Ten, fifteen (tortillas), how my mother gave the peones (tortillas)!'
36. *pero ka:'makán i'xcha'pa:nán nakxwá:'ti' i'xcha'pa:nán chu: lha: na tu molíno*
 pero ka:'makán i'x-cha'pá:-nan nak=xwá:'ti'
 but by.hand PST-mill-AP LOC=metate
- i'x-cha'pá:-nan chu: lha: na tu: molíno
 PST-mill-AP PTCL NEG still PTCL mill
 'But they milled by hand in the metate. They milled since there was still no mill.'

37. *xánka' i'skúja kinta:tá' i'skúja kintzi:'t*
 xánka' i'x-skuj-a kin-ta:tá' i'x-skuj-a kin-tzi:'t
 well PST-work-IMPF 1POSS-father PST-work-IMPF 1POSS-mother
 'My father used to work well; my mother used to work well.'
38. *tu: wa: i'kwán wa'chí' pues li:púj i'kpa:stá'ka chi: i'kli:sta'kni't*
 tu: wa: i'k-wan wa'chí' pues li:púj i'k-pa:sta'k-a
 PTCL here 1SG.SUB-say like.this well sad 1SG.SUB-remember-IMPF

 chi: i'k-li:-sta'k-ni:'t
 PTCL 1SG.SUB-INST-grow-PF
 'What I say here is sad because I remember how I had grown up.'
39. *xánka' chi: xa'kwa'yán xánka' tu: chu:*
 xánka' chi: xa-i'k-wa'yán xánka' tu: chu:
 well PCTL PST-1SUB-eat well PTCL PTCL
 'I ate well, well what...'
40. *tu: chu:'x li:mínka' tu: chu:'x ma:pu:ntaxtukán i'xkúk kintzi:'t wan*
 tu: chu: i'x-li:-min-ka' tu: chu:
 NREL PTCL PST-INST-come-IDF:PFV NREL PTCL

 i'x-ma:-pu:n-ta-xtu-kan i'x-kúk kin-tzi:'t wan
 PST-CS-vagina-INCH-out-IDF 3POSS-uncle 1POSS-mother say
 'Whatever was brought, whatever was taken out, says the uncle of my mother.'
41. *waní cha:'tín chi'xkú' chilh káuj pu'tzayá:uj misín*
 wan-ni cha:'-tín chi'xkú' chin-lh ka-a'n-uj
 say-DAT NUM.CLF-one man arrive-PFV OPT-go-1PL.SUB

 pu'tzá-ya:-uj misín
 look.for-IMPF-1PL.SUB jaguar
 'He says a man arrived wanting to go look for jaguars.'
42. *káuj ta'lanana:új ka:le:új kinchichi'ká'n wan*
 ka-a'n-uj ta'lá-nan-a:-uj ka:-le:'n-uj
 OPT-go-1PL.SUB hunt-AP-IMPF-1PL.SUB PL.OBJ-take-1PL.SUB

 kin-chichí'-ka'n wan
 1POSS-dog-PL.POSS say
 'Let's go hunting! We'll take our dogs, he says.'

43. *Manuel Mendez wani'kán*
 Manuel Mendez wan-ni'-kan
 Manuel Mendez say-DAT-IDF
 'He's called Manuel Mendez.'
44. *wi:kuschá qo:lujtín*
 wi:-kus-cha qo:lujtín
 sit-still-DIST old.man
 'The old man is still alive.'
45. *tali:mílh a'nú:' pá'xni' wani'kán pá'xni'*
 ta-li:-min-lh a'nú:' pá'xni' wan-ni'-kan pá'xni'
 3PL.SUB-INST-come-PFV over.there pig say-DAT-IDF pig
 'They brought a pig over there. It's called *pá'xni'*.'
46. *javalí wani'kán tali:mílh*
 javalí wan-ni'-kan ta-li:-min-lh
 boar say-DAT-IDF 3PL.SUB-INST-come-PFV
 'They brought what's called *javalí*.'
47. *lakxu:núnka' ma:wa'ká'ka' kiní:t*
 lak-xu:-nun-ka' ma:-wa'ká'-ka' kiní:t
 INTS-skin-AP-IDF:PFV CS-be.high.up-IDF:PFV meat
 'The meat was skinned and hung.'
48. *lha: ti: i'xtama:wá: kiní:t*
 lha: ti: i'x-tama:wá: kiní:t
 NEG PTCL PST-buy meat
 'No one bought meat.'
49. *li:mimá:'ka' xku't*
 li:-min-ma:'-ka' xku't
 INST-come-PROG-IDF:PFV badger
 'They brought badgers.'
50. *li:mimá:'ka' mapachí:n*
 li:-min-ma:'-ka' mapachí:n
 INST-come-PROG-IDF:PFV raccoon
 'They brought raccoons.'
51. *li:mimá:'ka' kuyuj*
 li:-min-ma:'-ka' kuyuj
 INST-come-PROG-IDF:PFV armadillo
 'They brought armadillos.'

52. *li:mimá:'ka' kilhsakáj*
 li:–min–ma:'–ka' kilh–sakáj
 INST–come–PROG–IDF:PFV mouth–gopher
 'They brought peacocks.'
53. *li:mimá:'ka' kuyúj*
 li:–min–ma:'–ka' kuyúj
 INST–come–PROG–IDF:PFV armadillo
 'They brought armadillos.'
54. *chi: i'xtawa'ká' kiní:t*
 chi: i'x–ta–wa'ká' kiní:t
 PTCL PST–INCH–be.high.up meat
 'How there was meat!'
55. *lha: ti: i'xtama:wá: kiní:t*
 lha: ti: i'x–tama:wá: kiní:t
 NEG PTCL PST–buy meat
 'No one bought meat.'
56. *wa'chí' kit i'kstá'kli'*
 wa'chí' kit i'k–sta'k–li'
 like.this PRN.1SG 1SG.SUB–grow–PFV
 'Like that I grew up.'
57. *i'kpa:stá'ka wa'chí' min kintakálhwa*
 i'k–pa:sta'k–a wa'chí' min kin–ta–kálhwa'
 1SG.SUB–remember–IMPF like.that come 1POSS–DCS–cry:DVB
 'I remember it, like that, my tears come.'
58. *min kilaqxta'ját kúma chu:wáj i'klaqtzima:'tzá' chuwá:j tapala:xlanán*
 min kin–laqxta'ját kúma chu:wáj i'k–laqtzin–ma:'=tzá'
 come 1POSS–tears because now 1SG.SUB–see–PROG=now
 chuwá:j tapala:xla–nan
 now get.expensive–AP
 'My tears come out because now I am seeing that everything is very expensive.'
59. *i'kmaka'tzi:ma:'tzá' chu:wáj*
 i'k–mak–ka'tzí:–ma:'=tza' chu:wáj
 1SG.SUB–body–know–PROG=now now
 'Now I am feeling...'

60. *chi: sa:má: a'qtu'tún sa:má: lha:tzá' makwán minpéso*
 chi: sa:má: a'q-tu'tún sa:má: lha:=tzá' makwán min-péso
 PTCL week NUM.CLF=three week NEG=now enough 2POSS-money
 '...that for weeks, for three weeks there is not enough money.'
61. *li:tama:wa:kána palh kú'xi' tu: chu: nawa'kutúna'*
 li:-tama:wá:-kan-a palh kú'xi' tu: chu: na-wa'-kutun-a'
 INST-buy-IDF-IMPF CONJ corn NREL PTCL FUT-eat-DSD-IMPF:2SG.SUB
 '(Money) buys things like corn, or whatever you want to eat.'
62. *maqa:stzá' lha: ti: i'xtama:wá: tu: chu: i'xwá*
 maqa:s=tza' lha: ti: i'x-tama:wá: tu: chu: i'x-wa
 long.ago=now NEG HREL PST-buy NREL PTCL PST-eat
 'A long time ago, no one bought meat.'
63. *i'xa'nán kú'xi' tza'tza' stapú:n lhmukúku stapú:n*
 i'x-a'nán kú'xi' tza'tza' stapú:n lhmukúku stapú:n
 PST-exist corn corncob beans yellow beans
 'There was corn, corncob, beans, and yellow beans.'
64. *kati'ya' mimorrál pimpa:'tzá' pú'xa' mistapú:n*
 ka-tí'ya' min-morrál pin-pa:'t=tzá' pú'xa'
 OPT-take:2SG.SUB 2POSS-bag go:2SUB.SG-PROG:2SUB=now cut:2SG.SUB
 min-stapú:n
 2POSS-bean
 'You take your bag and go cut your beans.'
65. *pimpa:'tzá' yí:ya' mimu:stulút pimpa:'tzá' yí:ya' minkulántu*
 pin-pa:'t=tza' yí:ya' min-mu:stulút
 go:2SUB.SG-PROG:2SUB=now pick:IMPF:2SG.SUB 2POSS-mulberry
 pin-pa:'t=tza' yí:ya' min-kulántu
 go:2SUB.SG-PROG:2SUB=now pick:IMPF:2SG.SUB 2POSS-cilantro
 'You go picking your mulberry; you go picking your cilantro.'
66. *pimpa:'tzá' yí:ya' saqáqa malhát pimpa:'tzá' yí:ya' qa:ntzalílh*
 pin-pa:'t=tza' yí:ya' saqáqa malhát
 go:2SUB.SG-PROG:2SUB=now pick:IMPF:2SG.SUB white mushroom
 pin-pa:'t=tza' yí:ya' qa:ntzalílh
 go:2SUB.SG-PROG:2SUB=now pick:IMPF:2SG.SUB type.of.plant(?)
 'You go picking your white mushrooms; you go picking your *kensali*.'

67. *a:'tzá:' nali:chitána' milí:wa'*
 a:'tzá:' na-li:-chitán-a' min-lí:wa'
 here FUT-INST-arrive:2SG.SUB-IMP:2SG.SUB 2POSS-eat:DVB
 'Here you will bring your food.'
68. *a:'tzá:' nawa'yána'*
 a:'tzá:' na-wa'yán-a'
 here FUT-eat-IMP:2SG.SUB
 'Here you will eat.'
69. *káni' nawa'yána'*
 káni' na-wa'yán-a'
 delicious FUT-eat-IMP:2SG.SUB
 'You will eat scrumptiously.'
70. *naswa:'káya' minpá'qlhchu'*
 na-swa:'ká-ya' min-pá'qlhchu'
 FUT-peel-IMP:2SG.SUB 2POSS-tomato
 'You will peel your tomatoes.'
71. *tu: chu: xatapúj pero chu:wáj tapala:xlanálh ka:'kilhtamakúj*
 tu: chu: xatapúj pero chu:wáj tapala:xlá-nan-lh
 NREL PTCL worry(?) but now get.expensive-AP-PFV
 ka: '-kilhtamakúj
 PLC-day
 'What you worry about now is that the world is getting expensive.'
72. *chu:wáj xali:tzetzá' chi: wá'ka' wani'má:'ka' kamaqe:stoqma:ka' lakstín*
 chu:wáj xa-li:-tze=tza' chi: wá'ka' wan-ni'-ma: '-ka'
 now DTV-INST-good=now PTCL be.high.up say-DAT-PROG-IDF:PFV
 ka:-ma:-qe:-stoq-ma: '-ka' lakstín
 PL.OBJ-CS-back-close-PROG-IDF:PFV children
 'Now it is good that they are calling the children up there to gather.'
73. *i'kqa'lhí: kawakús tza'ká'ta' kisqá'ta'*
 i'k-qa'lhí: ka:-wan=kus tza'ká'ta' kin-sqá'ta'
 1SG.SUB-have PL.OBJ-be=still little 1POSS-child
 '(If) I still have small children...'
74. *nai'ká'n i'ktalaqtzín*
 na-i'k-a'n i'k-ta-laqtzín
 FUT-1SG.SUB-go 1SG.SUB-DCS-see
 'I would go see (the gathering).'

75. *kit i'kli:li:puwán kit i'kli:li:puwán chi: a:'má:'*
 kit i'k-li:-li:puwán kit i'k-li:-li:puwán chi: a:'má:'
 PRN.1SG 1SG.SUB-INST-sad PRN.1SG 1SG.SUB-INST-sad PTCL this
 'That's why I am sad; I am sad because of this.'
76. *i'kqaxmá'ta xtachiwí:n dios xtachiwí:n kidioská'n*
 i'k-qaxmá't-a i'x-tachiwí:n dios i'x-tachiwí:n kin-dios-ka'n
 1SG.SUB-listen-IMPF 3POSS-word god 3POSS-word 1POSS-god-PL.POSS
 'I listen to the word of God, the word of our God.'
77. *pero ma:n lha: la i'kwán lha: i'klaqapása biblia*
 pero ma:n lha: la i'k-wán lha: i'k-laqapás-a bíblia
 but only NEG do 1SG.SUB-read NEG 1SG.SUB-know-IMPF bible
 'But only I do not read; I do not know (how to read) the bible.'
78. *kaklh i'kqaxmá'ta chi: wankán*
 kaklh i'k-qaxmá't-a chi: wan-kan
 only 1SG.SUB-hear-IMPF PTCL say-IDF
 'I only listen to what (the bible) says.'
79. *tze: i'kpu:wán tze: i'kpu:wán*
 tze: i'k-pu:wán tze: i'k-pu:wán
 good 1SG.SUB-think good 1SG.SUB-think
 'I think it's fine; I think it's good.'
80. *u:'tzá' kwa i'kli:li:puwán*
 u:'tzá' i'k-wa i'k-li:-li:puwán
 PRN.3SG 1SG.SUB-say 1SG.SUB-INST-sad
 'That, I say, is why I am sad.'
81. *u:'tzá' li:min kilaqxta'ját*
 u:'tzá' li:-min kin-laqxtaját
 PRN.3SG INST-come 1OBJ-tears
 'That's why my tears come.'
82. *u:'tzá' kit i'kli:laqxtá' u:'tzá' i'kli:ma'qá:n kinlaqxta'ját*
 u:'tzá' kit i'k-li:-laqxtá' u:'tzá' i'k-li:-ma'qá:n
 PRN.3SG PRN.1SG 1SG.SUB-INST-drip PRN.3SG 1SG.SUB-INST-throw
 kin-laqxta'ját
 1OBJ-tears
 'That's why I cry; that's why I sob.'

83. *lakxtím kit lha: i'ka:ta:'álh kilakstín i'ka:ta:'álh kinata:'nátna'*
 lakxtím kit lha: i'k-ka:-ta:'-a'n-lh kin-lakstín
 together PRN.1SG where 1SG.SUB-PL.OBJ-CMT-go-PFV 1POSS-children
 i'k-ka:-ta:'-a'n-lh kin-na-ta:'nát-na'
 1SG.SUB-PL.OBJ-CMT-go-PFV 1POSS-COL.PL-grandchild-PL
 kin-lak-xu:yá:n
 1POSS-APL-great.grandchild
 '(What I want) is to go with my children, and to go with my grandchildren, and
 great grandchildren.'
84. *lhú:wa' kilakxu:nán tanlhú:wa' kinata:'nátna' lhú:wa' kilakxu:nán*
 lhú:wa' kin-lak-xu:nán tan-lhú:wa'
 many 1POSS-APL-great.grandchild NUM.CLF-many
 kin-na-ta:'nát-na' lhú:wa' kin-lak-xu:nán
 1POSS-COL.PL-grandchild-PL many 1POSS-APL-great.grandchild
 '(I have) many great-grandchildren, many grand-children, many great-
 grandchildren.'
85. *cha: lawíla tzi:'kán tu:chá: sputni'yá:ni'*
 cha: la-wíla' tzi:'kán tu: cha: sput-ni'-ya:-ni'
 how be-sit:2SG.SUB grandmother NREL INT.PTCL be.missing-DAT-IMP-2OBJ
 '(Nobody says to me...)'How are you, grandmother? What are you missing?''
86. *kit i'ka'tzí: chu: i'klawí:*
 kit i'k-ka'tzí: chu: i'k-la-wi:
 PRN.1SG 1SG.SUB-know how 1SG.SUB-be-sit
 'I know how I live.'
87. *chu:ntzá: kit i'kli:li:puwán chu:ntzá:*
 chu:ntzá: kit i'k-li:-li:puwán chu:ntzá:
 like.this PRN.1SG 1SG.SUB-INST-sad like.this
 'That is why I am sad.'
88. *maq'a'túnu tate:xaká:' kinkamána'*
 maq-a'túnu ta-te:-xaká:' kin-kamán-na'
 NUM.CLF-each 3PL.SUB-PATH-get.annoyed 1POSS-child-PL
 'Sometimes my sons get annoyed.'

89. *chu:ntzá: kit i'kli:li:puwán maqa'túnu lha:tzá' i'kli:lhtatá*
 chu:ntzá: kit i'k-li:-li:puwán maq-a'túnu lha:=tzá'
 like.this PRN.1SG 1SG.SUB-INST-sad NUM.CLF-each NEG=now
 i'k-li:-lhtatá
 1SG.SUB-INST-sleep
 'That's why I am sad. Sometimes I do not sleep.'
90. *maqa'túnu i'kpa:stá'ka tu: chu: i'kle:a'qatuyúja*
 maq-a'túnu i'k-pa:stá'k-a tu: chu:
 NUM.CLF-each 1SG.SUB-remember-IMPF NREL PTCL
 i'k-li:-a'qa-tuyúj-a
 1SG.SUB-INST-ear-worry-IMPF
 'Sometimes I remember what I worry about.'
91. *i'kle:a'qatuyujmá:' tu: chu: na'kwá*
 i'k-li:-a'qa-tuyúj-ma:' tu: chu: na-i'k-wa
 1SG.SUB-INST-ear-worry-PROG NREL PTCL FUT-1SG.SUB-eat
 'I worry about what I'm going to eat...'
92. *chi: xa'ka'má:'*
 chi: xa-i'k-a'n-ma:'
 PTCL PST-1SG.SUB-go-PROG
 '(I worry about) how I was going.'
93. *pero a'kxníka' naktulá nakimésa i'kpa:stá'ka díos*
 pero a'kxníka' na-i'k-tulá nak=i'x-mésa
 but when FUT-1SG.SUB-sit LOC-3POSS-table
 i'k-pa:stá'k-a díos
 1SG.SUB-remember-IMPF god
 'But when I sit at the table, I remember God.'
94. *i'kpa:stá'ka Jésu Cristo a'kxníka' i'ktamá:' i'kpa:stá'ka díos*
 i'k-pa:stá'k-a Jésu Cristo a'kxníka' i'k-ta-ma:'
 1SG.SUB-remember-IMPF Jesus Christ when 1SG.SUB-INCH-lie
 i'k-pa:stá'k-a díos
 1SG.SUB-remember-IMPF god
 'I remember Jesus Christ. When I lay down, I remember God.'

95. *wa'chí' kiti'k puwán wa'chí' kiti'k pastáka*
 wa'chí' kit i'k-puwán
 like.this PRN.1SG 1SG.SUB-think

 wa'chí' kit i'k-pasták-a
 like.this PRN.1SG 1SG.SUB-remember-IMPF
 'That's how I think, that's how I remember it.'
96. *ka'kti'latamá:lh a:'la'qatá:'ti' laqakitzís ká:ta'*
 ka-i'k-ti'-latamá:-lh a:-laqa-tá:'ti' laqa-kitzís ká:ta'
 OPT-1SG.SUB-POT-live-PFV ADD-NUM.CLF-four NUM.CLF-five year
 'May I live another four or five more years!'
97. *kakimaxki:lh dios kintalhi'wi'kít*
 ka-kin-maxkí:-lh dios kin-talhi'wi'kít
 OPT-1OBJ-give-PFV god 1POSS-strength
 'God give me strength!'
98. *kakimaxki:lh kinqá'lhni'*
 ka-kin-maxkí:-lh kin-qá'lhni'
 OPT-1OBJ-give-PFV 1POSS-blood
 'Give me my blood!'
99. *kakimaxki:lh dios chi:'k puwán*
 ka-kin-maxkí:-lh dios chi: i'k-puwán
 OPT-1OBJ-give-PFV god PTCL 1SG.SUB-think
 'May God give me understanding!'
100. *kakima:pa:nu:ní'lh kit kintali:puwát*
 ka-kin-ma:pa:nú:-ní'-lh kit kin-ta-li:puwán-t
 OPT-1OBJ-remove-DAT-PFV PRN.1SG 1POSS-DCS-sadness-DVB
 'Take away my sadness!'
101. *kakima:pa:nu:ní'lh kintakálhwa'*
 ka-kin-ma:pa:nú:-ní'-lh kin-ta-kálhwa'
 OPT-1OBJ-remove-DAT-PFV 1POSS-DCS-cry:DVB
 'Take away my tears!'
102. *kakima:pa:nu:ní'lh kit chi: chu: i'kpuwán*
 ka-kin-ma:pa:nú:-ní'-lh kit chi: chu: i'k-puwán
 OPT-1OBJ-remove-DAT-PFV PRN.1SG PTCL PTCL 1SG.SUB-think
 'Take away how I think!'

103. *lha: chu: kit nai'ká'n lha: chu: ka'nkutún*
 lha: chu: kit na-i'k-a'n lha: chu: ka-a'n-kutun
 where PTCL PRN.1SG FUT-1SG.SUB-go where PTCL OPT-go-DSD
 'Where will I go? Where does one want to go?'
104. *tze: kai'kmílh tze: kai'ki:taspi'tli'*
 tze: ka-i'k-min-lh tze: ka-i'k-ki:-ta-spi't-li'
 good OPT-1SG.SUB-come-PFV good OPT-1SG.SUB-RT-DCS-turn-PFV
 'May I go well! May I return well!'
105. *tze: kai'kchimpá nakinchik*
 tze ka-i'k-chin-pa nak=kin-chik
 well OPT-1SG.SUB-arrive-RPT:PFV LOC=1POSS-house
 'May I arrive well to my house again.'
106. *a:'tzá:' na'kti'yapalá tu: chu: i'kwa'ku'tún*
 a:'tzá:' na-i'k-ti'yá-pala tu: chu: i'k-wa'-ku'tun
 here FUT-1SG.SUB-grab-RPT NREL PTCL 1SG.SUB-eat-DSD
 'Here I will grab again whatever I want to eat.'
107. *na'ktanu:palaya:chí kinchik*
 na-i'k-tanú:-pala-ya:-chi kin-chik
 FUT-1SG.SUB-enter-RPT-IMPF-PRX 1POSS-house
 'I will go to my house again.'
108. *nai'kwá tu: chu: i'kwa'kutunte:lhá*
 na-i'k-wa tu: chu: i'k-wa'-kutun-te:lha
 FUT-1SG.SUB-eat NREL PTCL 1SG.SUB-eat-DSD-AMB
 'I will eat what I want to continue eating.'

xatachiwí:n wanqén ‘The Frog Story’ by Fabiola Andrade Santiago

ID: FAS Frog Story

1. *xatachiwí:n wanqén*
xa-ta-chiwí:-n wanqén
DTV-DCS-speak-DVB frog
‘the frog story’

2. *cha:'tín sqá'ta' i'xqalhi: cha:'tín wanqén e:' cha:'tín i'xchichí'*
cha:'-tín sqá'ta' i'x-qalhi: cha:'-tín wanqén
NUM.CLF-one child PST-have NUM.CLF-one frog

e:' cha:'-tín i'x-chichí'
and NUM.CLF-one 3POSS-dog
‘A boy had a frog and a dog.’

3. *tzi:'swánli' tamá:lh sqá'ta' nai'xtáma' tatukálh i'xchichí'*
tzi:'swán-li' tamá:-lh sqá'ta' nak=i'x-táma'
night.fall-PFV lie.down-PFV child LOC-3POSS-bed

ta-tuká-lh i'x-chichí'
DCS-go.up-PFV 3POSS-dog
‘Night has fallen. The boy lied down on his bed. The dog went up (on the bed).’

4. *chi: xqa'qá:lh takí:'li sqá'ta'*
chi: xqa'qá:-lh takí:'-lh=i sqá'ta'
PTCL dawn-PFV get.up-PFV=JUNCT child
‘When it dawned, the boy got up.’

5. *e:' la'qtzili xwanqén lha:tzá' tojo:má:' lha: i'xmojo:ní:'t.*
e:' la'qtzin-lh=i i'x-wanqén lha:=tza' tojo:-ma:'
and see-PFV=JUNCT 3POSS-frog NEG=now inside-PROG

lha: i'x-mojo:-ní:'t
where PST-put.down-PF
‘And he saw his frog was not inside where he had put it.’

6. *tza:'lani:'tzá' i'xwanqén*
tza:'la-ni:'t=tza' i'x-wanqén
flee-PF=now 3POSS-frog
‘His frog has already escaped.’

7. *sej pu'tzálh*
 sej pu'tzá-lh
 much look-PFV
 'He looked for it a lot.'
8. *pu'tzaqó:li nai'xtatu:nú:t*
 pu'tza-qo:-lh=i nak=i'x-tatu:nú:t
 look.for-TOT-PFV=JUNCT LOC=3POSS-shoe
 'He looked for (his frog) in his shoe.'
9. *ma:lakí:lhni i'xma:qálhchu'*
 ma:-lakí:-lh=nak i'x-ma:qálhchu'
 CS-be.open-PFV=LOC 3POSS-window
 'He opened his window.'
10. *ta'sani'lh*
 ta'sá-ni'-lh
 call.out-DAT-PFV
 'And he called out (to his frog).'
11. *chu: wa'chí' xachichí' pu'tzálh*
 chu: wa'chí' xa-chichí' pu'tzá-lh
 PTCL like.this DTV-dog look.for-PFV
 'The dog looked for it.'
12. *we:m minchá chichí' ta:lh má:n nakmaqálhchu'*
 we:m min-chá chichí' ta:lh má:n nak=maqálhchu'
 IDPH come-DIST dog high LOC=window
 'Wham, the dog fell from high up on the window.'
13. *taxtúli sqá'ta' ki:ti'yálh i'xchichí'*
 taxtú-lh=i sqá'ta' ki:-ti'yá-lh i'x-chichí'
 leave-PFV=JUNCT child RT-grab-PFV 3POSS-dog
 'The boy left and grabbed his dog.'
14. *taxtúli nai'xchík sqá'ta' le:'li i'xchichí'*
 taxtú-lh=i nak=i'x-chik sqá'ta' le:'n-lh=i i'x-chichí'
 leave-PFV=JUNCT LOC=3POSS-house child take-PFV=JUNCT 3POSS-dog
 'He left his house and he took his dog.'
15. *taá'lh naka:'laqlhki'wí'n*
 ta-a'n-lh nak=ka:'-laqlh-kí'wí'-n
 3PL.SUB-go-PFV LOC=PLC-?-tree-PL
 'They went into the forest.'

16. *a'lh ta'sáni i'xwanqén*
a'n–lh ta'sá–ní i'x–wanqén
go–PFV call–DAT 3POSS–frog
‘He went calling for his frog.’
17. *pu'tzálh nai'xlhúku: sakáj sqá'ta' i'xwanqén*
pu'tzá–lh nak=i'x–lhúku: sakáj sqá'ta' i'x–wanqén
look–PFV LOC=3POSS–burrow gopher child 3POSS–frog
‘The child looked for his frog in the gopher’s borrow.’
18. *chi'chí' ta:lh má:n i'xpu'tzamá:' lha: wa'ká' i'xchík u:'xúm*
chi'chí' ta:lh má:n i'x–pu'tza–má:'
dog high PST–look.for–PROG

lha: wa'ká' i'x–chík u:'xúm
where be.high.up 3POSS–house bumble.bee
‘The dog was looking for (the frog) up high where the bumble bee’s house hangs.’
19. *taxtuchí sakáj maqe:'qlhálh sqá'ta'*
taxtu–chi sakáj maqe:'qlhá–lh sqá'ta'
leave–PRX gopher scare–PFV child
‘The gopher came out and scared the boy.’ [FAS: Frog story 19]
20. *chichí' ma:yujú:lh i'xchík u:'xúm*
chichí' ma:–yuj–u:–lh i'x–chík u:'xúm
dog CS–come.down–CS–PFV 3POSS–house bumble.bee
‘The dog knocked down the bumble bee’s house.’
21. *sqá'ta' tukálh naki'wi'*
sqá'ta' tuká–lh nak=kí'wi'
boy go.up–PFV LOC=tree
‘The child went up the tree.’
22. *ya: i'xlhú'ku: mónqxu' naki'xcha:'xpá:n kí'wi'*
ya: i'x–lhú'ku: mónqxu' nak=i'x–cha:'xpá:n kí'wi'
stand 3POSS–burrow owl LOC=3POSS–trunk tree
‘The owl stood on its burrow on the trunk of the tree.’
23. *we:m minchá sqá'ta' naki'wi' a'kxníka' taxtúlh mónqxu' nai'xchík*
we:m min–chá sqá'ta' nak=kí'wi' a'kxníka' taxtú–lh mónqxu'
IDPH come–DIST child LOC=tree when leave–PFV owl

nak=i'x–chík
LOC=3POSS–house
‘Wham, the boy fell from the tree when the owl came out of its house.’

24. *chichí' a'kpu:xkawá:lh u:'xúm*
 chichí' a'kpu:-xkawá:-lh u:'xúm
 dog head.crown-run.after-PFV bumblebee
 'The dog ran after the bumblebees.'
25. *qoschá mónqxu' lha: i'xwa'ká' nai'xchík*
 qos-chá mónqxu' lha: i'x-wa'ká' nak=i'x-chik
 fly-DIST owl where PST-be.high.up LOC=3POSS-house
 'The owl flies to where its house was up high.'
26. *maqe:'qlháli' sqá'ta' tuká'lh xa'kpú:n talhpán*
 maqe:'qlhá-li' sqá'ta' tuká-*lh* i'x-a'kpú:n talhpán
 frighten-PFV child go.up-PFV 3POSS-head.crown boulder
 '(The owl) scared the boy and he climbed up the rock.'
27. *li:maqachi'pa:xná'lh laqatín i'xa'qán kí'wi'*
 li:-maqachi'pá:-x-nan-lh laqa-tin i'x-a'qán kí'wi'
 INST-hand-hold-CNN-AP-PFV NUM.CLF-one 3POSS-branch tree
 'He supported himself with a tree's branch.'
28. *lha: i'xlaqtzini:'t tu: i'xli:maqachi'pa:xnáni waní i'xa'qapi:loqót jú:ki'*
 lha: i'x-laqtzin-ni:'t tu: i'x-li:-maqachi'pá:-x-nan=i wan-ni
 NEG PST-see-PF PTCL PST-INST-hand-hold-CNN-AP=JUNCT say-DAT
 i'x-a'qa-pi:-loqót jú:ki'
 3POSS-ear-chest-bone deer
 'He had not realized that he supported himself with the deer's horn.'
29. *tu'jnúli jú:ki' chu:wáj chi: chichí' a'kpu:xkawá'lh*
 tu'j-nun-lh=i jú:ki' chu:wáj chi: chichí'
 run-AP-PFV=JUNCT deer now PTCL dog
 a'kpu:-xkawá-lh
 head.crown-scare.away-PFV
 'The deer ran now that the dog scared it away.'
30. *sqá'ta' i'xwa'ká' naxa'kpú:n jú:ki'*
 sqá'ta' i'x-wa'ká' nak=i'x-a'kpú:n jú:ki'
 child PST-be.high.up LOC=3POSS-head.crown deer
 'The boy was up on the deer's head.'
31. *we:m ma:tana'pú:lh sqá'ta' jú:ki'*
 we:m ma:-tana'pú:-lh sqá'ta' jú:ki'
 IDPH CS-be.at.bottom-PFV child deer
 'Wham, the deer made the child fall to the bottom of the hill.'

32. *naktapánkni' chu: wa'chí' chichí' we:m a'lh*
 nak=tapánkni' chu: wa'chí' chichí' we:m a'n-lh
 LOC=landslide PTCL like.this dog IDPH go-PFV
 'From the landslide, the dog fell.'
33. *ponqx tojo:chá nakxká:n sqá'ta' e:' i'xchichí'*
 ponqx tojo:-chá nak=xká:n sqá'ta' e:' i'x-chichí'
 IDPH immersed-DIST LOC=water child and 3POSS-dog
 'Splash, the child and his dog were immersed in water.'
34. *tapa:takútlí' chichí' e:' sqá'ta' talaqtzilh qa'tlá' a'qxqólh*
 ta-pa:-ta-kut-li' chichí' e:' sqá'ta' ta-laqtzín-lh
 3PL.SUB-belly-INCH-OUT-PFV dog and child 3PL.SUB-see-PFV
 qa'tlá' a'qxqólh
 big trunk
 'The dog and the child got out of the water and they saw a big trunk.'
35. *a'ntzá:' tatukálh*
 a'ntzá:' ta-tuká-lh
 over.there 3PL.SUB-go.up-PFV
 'They went up over there.'
36. *taqaxmátli' tu:n taqaxmátli' e:' tapu'tzáli tu: chu: ta'sá*
 ta-qaxmát-li' tu:≡n ta-qaxmát-li' e:'
 3PL.SUB-hear-PFV NREL≡JUNCT 3PL.SUB-hear-PFV and
 ta-pu'tzá-lh≡i tu: chu: ta'sá
 3PL.SUB-look.for-PFV≡JUNCT NREL PTCL vocalize
 'They listened and listened, and they looked for what was making noise.'
37. *e:' laqtzín-lh i'xwanqén sqá'ta' tantu'tzá'*
 e:' laqtzín-lh i'x-wanqén sqá'ta' tan-tu'=tza'
 and see-PFV 3POSS-frog child NUM.CLF-two=now
 'And the child saw his frog; now (there were) two of them!'
38. *cha:'tín xachi'xkú' e:' cha:'tín xapuská:t*
 cha:'-tín xa-chi'xkú' e:' cha:'-tín xa-puská:t
 NUM.CLF-one DTV-man and NUM.CLF-one DTV-woman
 'One male and one female (frog).'
39. *e:' chu:wáj i'xtatatze'qni i'xlakstinkán*
 e:' chu:wáj i'x-ta-tatze'q-ni i'x-lakstín-ka'n
 and now PST-3PL.SUB-hide.oneself-DAT 3POSS-children-PL.POSS
 'And their children were still hiding (from him).'

40. *waní:' i'xtaqa'lhs:tzá' i'xlakstín i'xwanqén*
 waní:' i'x-ta-qa'lhs:=tzá' i'x-lakstín i'x-wanqén
 turn.out? PST-3PL.SUB-have=now 3POSS-children 3POSS-frog
 'So, it turns out that his frog already had its children.'
41. *la'qtzi'lh sqá'ta'*
 la'qtzi'n-lh sqá'ta'
 see-PFV child
 '(The frog) saw the boy...'
42. *chi: maklálh i'xwanqén sqá'ta'*
 chi: maklá-lh i'x-wanqén sqá'ta'
 PTCL find-PFV 3POSS-frog child
 'when the boy found his frog.'
43. *lha:tzá' lé:'li u:'tzá' tu: i'xwanqé:n*
 lha:=tzá' lé:'n-lh=i u:'tzá' tu: i'x-wanqé:n
 NEG=now take-PFV=JUNCT PRN.3SG NREL 3POSS-frog
 'The boy did not take the one that was his frog now.'
44. *cha:'tintzá' xasqá'ta' le:'lh nai'xchík*
 cha:'-tin=tzá' xa-sqá'ta' le:'n-lh nak=I'x-chík
 NUM.CLF-one=now DTV-child take-PFV LOC=3POSS-house
 'The boy took one of the children to his house.'

ID: FAS Woodchopper

1. *xatachiwí:n laqxqaná'*
 xa-ta-chiwí:-n laq-xqa-na'
 DTV-DCS-speak-DVB INTS-split-AGT
 'The story of the woodchopper'

2. *i'xa'nán cha:'tín puská:t*
 i'x-a'nán cha: '-tín puská:t
 PST-exist NUM.CLF-one woman
 'There was a woman...'

3. *wani'kán Maria e:' i'xchixkú' wani'kán Juan*
 wan-ni'-kan Maria e:' i'x-chixkú' wan-ni'-kan Juan
 say-DAT-IDF Maria and 3POSS-man say-DAT-IDF Juan
 '...named Maria and a her husband named Juan.'

4. *i'xyá: i'xchiká'ni lha: a'má:' i'xkilhtún pú:xqg'*
 i'x-ya: i'x-chiká'n≡i lha: a'n-ma:' i'x-kilhtún
 PST-stand 3POSS-house-PL.POSS≡JUNCT where go-PROG 3POSS-edge

 pú:xqa'
 river
 'Their house stood where the edge of the river runs.'

5. *laqatín tzi:'sa wálhi a'nú:' Juan*
 laqa-tín tzi:'sa wan-lh≡i a'nú:' Juan
 NUM.CLF-one night say-PFV≡JUNCT over.there Juan
 'One night, Juan said...'

6. *i'ká'na i'klaqxqá kí'wi'*
 i'k-a'n-a i'k-laq-xqa kí'wi'
 1SG.SUB-go-IMPF 1SG.SUB-INTS-split wood
 'I'm going to chop wood.'

7. *natlawayá:uj qá'tla' makskút*
 na-tlawá-ya:-uj qá'tla' makskút
 FUT-make-IMPF-1PL.SUB big fire
 'We are going to make a big fire.'

8. *waní i'xpuská:t Maria lha: kapíti tzi:'sa*
 wan-ni i'x-puská:t Maria lha: ka-pit=i tzi:'sa
 say-DAT 3POSS-woman Maria NEG OPT-go:2SG.SUB:PFV=JUNCT night
 'His wife, Maria, says to him, don't go out at night!'
9. *sa: napi'na' nate:maqá:na' qantín kí'wi' naktéj*
 sa: na-pi'n-a' na-te:-maqá:n-a' qan-tin
 if FUT-go:2SUB-IMPF:2SG.SUB FUT-PATH-throw-IMPF:2SG.SUB NUM.CLF-one

 kí'wi' nak=tej
 stick LOC=path
 'If you go, you will drop a stick in the path.'
10. *a'kxníka' kiti'k taxtú tzi:'sa na'kli:che'qxlá*
 a'kxníka' kit i'k-taxtú tzi:'sa na-i'k-li:-che'qxlá
 when PRN.1SG 1SG.SUB-leave night FUT-1SG.SUB-INST-stumble
 'When I go out at night, I will stumble on it.'
11. *e:' naktamo:'qó'sa naka'nta:kí:' nakxká:n*
 e:' na-i'k-ta-mo:'qó's-a na-i'k-a'nta:kí:' nak=xka:n
 and FUT-1SG.SUB-INCH-fall-IMPF FUT-1SG.SUB-go.suddenly LOC=water
 'And I'm going to fall. I'm going to end up in the water.'
12. *na'ktojo:ya:chá naksta'jqó:*
 na-i'k-tojo:-ya:-cha na-i'k-sta'j-qo:
 FUT-1SG.SUB-be.immersed-IMPF-DIST FUT-1SG.SUB-wet-TOT
 'I will be immersed in water and will get completely wet.'
13. *naktakúta naklónqa*
 na-i'k-ta-kut-a na-i'k-lonq-a
 FUT-1SG.SUB-INCH-up-IMPF FUT-1SG.SUB-cold-IMPF
 'I will get up and will be cold.'
14. *lha: kati'pa:tle'qé:'lh waní Juan a:'lh*
 lha: ka-ti'-pa:tle'qé:-lh wan-ni Juan a'n-lh
 NEG OPT-POT-happen-PFV say-DAT Juan go-PFV
 'It is not going to happen, says Juan, and he left.'
15. *tzukúlh laqxqá i'xki'wi'*
 tzukú-lh laq-xqa i'x-kí'wi'
 begin-PFV INTS-split 3POSS-wood
 'He began chopping his wood.'

16. *e:'ka:ná:j tu: waní i'xpuská:t*
 e:' ka:ná:j tu: wan-ni i'x-puská:t
 and truly HREL say-DAT 3POSS-woman
 'And it was true what his wife said to him.'
17. *te:maqá:lh qantín kí'wi' naktéj lha: laktaxtú Maria*
 te:-maqá:n-lh qan-tin kí'wi' nak=tej lha: lak-taxtú
 PATH-drop-PFV NUM.CLF-one stick LOC=path where INTNS-leave
 Maria
 Maria
 'He passed by and dropped a stick on the road where Maria comes out.'
18. *li:che'qxlálh*
 li:-che'qxlá-lh
 INST-stumble-PFV
 'She stumbled on (the stick).'
19. *ponqx xtojo:chá nakxká:n*
 ponqx i'x-tojo:-chá nak=xka:n
 IDPH PST-be.immersed-DIST LOC=water
 'Splash, she fell into the river.'
20. *takútlí' nakxká:n sta'jqo:ni:'t lonqte:lhá*
 ta-kut-li' nak=xka:n sta'j-qo:-ni:'t lonq-te:lhá
 INCH-up-PFV LOC=water wet-TOT-PF cold-AMB
 'She got out of the river; she was totally soaked and went along all cold.'
21. *tanu:chá nai'xchík a'kcha:'nte:lhá tanú:lh*
 ta-nu:-cha nak=i'x-chik a'chá:'n-te:lha ta-nu:-lh
 INCH-in-DIST LOC=3POSS-house have.enough-AMB INCH-in-PFV
 'She went into her house and went along very annoyed.'
22. *e:' waní i'xqo:lú' Juan*
 e:' wan-ni i'x-qo:lú' Juan
 and say-DAT 3POSS-husband Juan
 'And she says to her husband Juan...'
23. *lí:wa' pi't laqxqa:nána' i'kti'waní'ni' lha: kapi't*
 lí:wa' pi't laq-xqa:-nan-a'
 on.purpose leave:2SG.SUB:PFV INTNS-chop-AP-IMPF:2SG.SUB
 i'k-ti'-wan-ni-ni' lha: ka-pi't
 1SG.SUB-POT-say-DAT-2OBJ NEG OPT-go:2SG.SUB:PFV
 'Why did you leave to chop wood? I told you not to leave!'

24. *i'kli:cha'qxlálin kí'wi' tu:n te:máka' ponqx i'ktojó:li nakxká:n*
 i'k-li:-che'qxlá-lh=i=nak kí'wi' tu:≡n
 1SG.SUB-INST-stumble-PFV≡JUNCT=LOC tree NREL≡JUNCT
- te:-máka'
 PATH-throw:2SG.SUB
 'I stumbled on the stick that you dropped in passing.'
25. *ponqx i'ktojó:li nakxká:n e:' chu:wáj i'klonqma:'*
 ponqx i'k-tojó:-lh=i nak=xka:n e:'
 splash 1SG.SUB-be.immersed-PFV≡JUNCT LOC=water and
- chu:wáj i'k-lonq-ma:'
 now 1SG.SUB-be.cold-PROG
 'Splash, I fell in the water, and now I am cold.'
26. *kalá'qtzi' i'ksta'jqó:lh e:' i'klonhqaxni:te:lhá*
 ka-lá'qtzi' i'k-sta'j-qa:-lh e:'
 OPT-see:2SG.SUB:PFV 1SG.SUB-wet-TOT-PFV and
- i'k-lonq-a-xni:-te:lhá
 1SG.SUB-be.cold-CNN-die-AMB
 'Look! I got completely wet and I'm dying of cold.'
27. *waní chuwá:j e:' Juan*
 wan-ni chuwá:j e:' Juan
 say-DAT now and Juan
 'Now says Juan...'
28. *kakima:sputu:núni' lha: lí:wa i'klhúlh*
 ka-kin-ma:-sput-u:-nun-ni' lha: lí:wa i'k-lhu-lh
 OPT-1OBJ-CS-finish-CS-AP-DAT:2SG.SUB NEG on.purpose 1SG.SUB-do-PFV
 'Forgive me, I didn't do it on purpose.'
29. *tu: xai'ká'lh i'kti:yá kí'wi'*
 tu: xa-i'k-a'n-lh i'k-ti:yá kí'wi'
 PTCL PST-1SG.SUB-go-PFV 1SG.SUB-take wood
 'If I had not gone to bring wood,'

30. *lha: tu:n tu: i'xli:tzi'tzi'nti' wani'káni Maria*
 lha: tu:≡n tu: i'x-li:-tzi'tzi'n-ti' wan-ni'-kan≡i
 NEG PTCL≡JUNCT NREL PST-INST-be.warm-2SG.SUB:PFV say-DAT-IDF≡JUNCT

Maria

Maria

'you would have nothing to warm you up, he tells Maria.'

slulúk ‘Chameleon’ by Raymundo Lechuga Pérez

ID: RLP Chameleon

1. *xwi: cha:'tín slulúk i'xwanikán Jesus*
i'x-wi: cha:'-tín slulúk i'x-waní'-kan Jesus
PST-sit NUM.CLF-one lizard PST-say-IDF Jesus
‘There was once a lizard named Jesus.’

2. *e:' tzamá:' Jesus*
e:' tzamá:' Jesus
and that Jesus
‘and that Jesus...’

3. *kwan i'lhkititnín lha: xlakapalá a'kxnika xtapali: i'xmákni'*
i'k-wan i'x-lhkitít-nin lha: i'x-lakapalá
PRES-1SG.SUB-say PST-lazy-AP NEG PST-hurry

a'kxnika i'x-xtapali: i'x-mákni'
when PST-change 3POSS-body
‘I say, he was lazy and would not hurry to change his body.’

4. *pó'qtu' wa'chí' i'xlá laqálh laqálh*
pó'qtu' wa'chí' i'x-la laqálh laqálh
always like.that PST-be daily daily
‘Like that he was every day.’

5. *po'qtú' po'qtú' lha: xlakapalá xtapali: i'xmákni' chi: ma'qa:'pi'tzín*
po'qtú' po'qtú' lha: i'x-lakapalá i'x-ta-palí: i'x-mákni'
always always NEG PST-hurry PST-DCS-change 3POSS-body

chi: ma'qa:'pi'tzín
PTCL some
‘Always, he did not hurry to change his body like some of the others.’

6. *e:' maqtín tej pa:tle'qé:qe:lh ka:ta:'á'lh*
e:' maq-tín tej pa:tle'qé:-qe:-lh ka:-ta:'-a'n-lh
and NUM.CLF-one path happen-TOT-PFV PL.OBJ-CMT-go-PFV
‘And once on the way, it happened; he went together with all (his friends).’

7. *i'xamígos tatojó:lh nakpu:tlún*
i'x-amígos ta-tojó:-lh nak=pu:tlún
3POSS-friends 3PL.SUB-be.immersed-PFV LOC=mud
‘His friends were immersed in the mud.’

8. *katatojó:li i'xamígos e:' maktojó:li Jesus*
ka-ta-tojó:-lh≡i i'x-amígos e:' mak-tojó:-lh≡i
OPT-3PL.SUB-immersed-PFV≡JNCT 3POSS-friends and body-immersed-PFV≡JNCT
Jesus
Jesus
‘His friends wanted to be immersed (in mud), and Jesus was immersed.’
9. *chu:n tu:n pa:tle'qé:lh i'xamigos paláj taxtapalí: i'xmákni'ká'n*
chu:≡n tu:≡n pa:tle'qé:-lh i'x-amígos
PTCL≡JNCT NREL≡JNCT happen-PFV 3POSS-friends
paláj ta-xtapalí: i'x-mák-ni'-ká'n
quickly 3PL.SUB-change 3POSS-body-PRT-PL.POSS
‘What happened, his friends, their bodies changed quickly.’
10. *wa'chí'n chi: wani:'t pu:tlún walh i'xmákni'ká'n*
wa'chí'≡n chi: wan-ni:'t pu:tlún wan-lh i'x-mák-ni'-ka'n
like.this≡JNCT PTCL be-PF mud be-PFV 3POSS-body-PRT-PL.POSS
‘Like that, how (their bodies) had been (the color of) mud; their bodies were.’
11. *pero Jesus pus*
pero Jesus pus
but Jesus then
‘but Jesus, well,...’
12. *lha: la chi: paláj xtapalí: i'xmákni'*
lha: la chi: paláj i'x-ta-palí: i'x-mák-ni'
NEG do PTCL fast PST-DCS-change 3POSS-body-PRT
‘His body could not change quickly.’
13. *tze xmakni'n tamakxtá'kli' i'xamigos paláj chin taxtapalí:lh i'xmákni'ká'n*
tze i'x-mák-ni'-n ta-mák-xta'k-li' i'x-amigos
good 3POSS-body-PRT-PL 3PL.SUB-body-grow-PFV 3POSS-friends
paláj chi:≡n ta-xtapalí:-lh i'x-mákni'-ka'n
quickly PTCL≡JNCT 3PL.SUB-change-PFV 3POSS-body-PL.POSS
‘His friends changed their bodies well; how quickly their bodies changed.’
14. *e:' tu: pa:tle'qé:lh*
e:' tu: pa:tle'qé:-lh
and NREL happen-PFV
‘and what happened...’

15. *laqtzínka' Jesus*
 laqtzín-ka' Jesus
 see-IDF:PFV Jesus
 'Jesus was seen.'
16. *wa'chi'tzá' i'xlá chi: makwán*
 wa'chi'=tza' i'x-la chi: mak-wan
 like.this=now PST-be PTCL body-be
 'He was like this; his body was a certain way.'
17. *tzukúlh tali:kilhchuyá: i'xamígos*
 tzukú-lh ta-li:-kilh-chuyá: i'x-amígos
 begin-PFV 3PL.SUB-INST-mouth-crazy 3POSS-friends
 'His friends began to make fun of him.'
18. *tzukúlh tawaní xla lha: la tamakxtapali: xla palaj*
 tzukú-lh ta-wan-ni i'x-la lha: la ta-mak-xtapali:
 begin-PFV 3PL.SUB-say-DAT PST-be NEG be DCS-body-change

 i'x-la palaj
 PST-be fast
 'They began to say to him that his body could not change quickly.'
19. *pus tu: choj e:' xla kwantanejé chi:n tamakxtapali:*
 pus tu: choj e:' i'x-la kwantanejé chi:n
 well NREL now and PST-be how.long(Sp.) PTCL≡n

 ta-mak-xtapali:
 DCS-body-change
 'Well, now, it was a long time before his body changed.'
20. *astá a'kxnika'tzá' tzi:'sa xla*
 astá a'kxnika'=tzá' tzi:'sa i'x-la
 until(Sp.) when=now night PST-be
 'When it became night...'
21. *tamakxtapali: chi: wani:'t*
 ta-mak-xtapali: chi: wan-ni:'t
 DCS-body-change PTCL be-PF
 'his body changed; how it had been....'
22. *pu:tlún wa'chi'tzá' maklé:'lh pero sta tzi:'satzá'*
 pu:tlún wa'chi'=tzá' mak-le:'n-lh pero sta tzi:'sa=tzá'
 mud like.this=now body-take-PFV but it.was(Sp.) night=now
 'like (the color of) mud now, his body changed (to mud) but now it was night.'

23. *choj maqtín*
 choj maq-tin
 now NUM.CLF-one
 ‘Now, one time...’
24. *ka:ta:'a'nqe:'pá i'xamígos lha: ma:wá'ka' lónqni'*
 ka:-ta: '-a'n-qe: '-pa i'x-amígos lha: ma:-wá'ka' lonq-ni'
 PL.OBJ-CMT-go-TOT-PRT 3POSS-friends where CS-be.high.up cold-DVB
 ‘He went again with all his friends to where it snowed.’
25. *le:'mpaláka' Jesus*
 le:'n-palá-ka' Jesus
 take-RPT-IDF:PFV Jesus
 ‘They took Jesus again.’
26. *taa'lh i'xtantutú:nká'n*
 ta-a'n-lh i'x-tan-tutú:n-ka'n
 3PL.SUB-go-PFV 3POSS-NUM.CLF-three-PL.POSS
 ‘The three of them went.’
27. *choj a'ntzá' wa'chí'n pa:tle'qe:pá*
 choj a'ntzá' wa'chí'≡n pa:tle'qé:-pa
 now over.there seem≡JUNCT happen-RPT:PFV
 ‘Now, over there, it happened again.’
28. *paláj i'xamígos taxtapalí:lh i'xmakni'ká'n*
 paláj i'x-amígos ta-xtapalí:-lh i'x-mak-ni'-ka'n
 fast 3POSS-friends 3PL.SUB-change-PFV 3POSS-body-PRT-PL.POSS
 ‘His friends changed their bodies quickly.’
29. *saqáqa tawanqó:lh xlaká'ni xmakni'ká'n*
 saqáqa ta-wan-qo:-lh xlaká'n≡i i'x-makni'-ka'n
 white 3PL.SUB-be-TOT-PFV PRN.3PL≡JUNCT 3POSS-body-PL.POSS
 ‘They were white all over their bodies.’
30. *wa'chí'n chi: wani:'t lónqni'*
 wa'chí'≡n chi: wan-ni:'t lonq-ni'
 like.this≡JUNCT PTCL be-PF cold-DVB
 ‘How it had been (the color of) snow.’
31. *e:'n choj Jesus*
 e:'≡n choj Jesus
 and≡JUNCT now Jesus
 ‘And now Jesus...’

32. *pus cómo lha: la paláj xtapalí: i'xmákni'*
 pus cómo lha: la paláj xtapalí: i'x-mak-ni'
 well how NEG do fast change 3POSS-body-PRT
 'well since he cannot change his body quickly...'
33. *chu:wáj chi: makwaní:t xla*
 chu:wáj chi: mak-wan-ni:t i'x-la
 now PTCL body-be-PF PST-be
 'he had stayed with (the same) body.'
34. *e:' chu: wa'chí'n pa:tleqe:pá*
 e:' chu: wa'chí'≡n pa:tleqé:'-pa
 and PTCL like.that≡JUNCT happen-RPT
 'And how like that it happened again.'
35. *tzu'ku'paláka' li:kilhchuyá:kán e:' li:kilhchuyá:kán chi: lha: la xtapalí: xla xmákni'*
 tzu'kú'-pala-ka' li:-kilh-chuyá:-kan e:'
 begin-RPT-IDF:PFV INST-mouth-crazy-IDF:IMPF and
 li:-kilh-chuyá:-kan chi: lha: la i'x-tapalí:
 INST-mouth-crazy-IDF:IMPF PTCL NEG do PST-change
 xla i'x-mákni'
 PRN.3SG 3POSS-body
 'Again they started making fun of him and making fun of him because he could not change his body.'
36. *tzukúlh tali:kilhchuyá: i'xamígos*
 tzukú-lh ta-li:-kilh-chuyá: i'x-amígos
 begin-PFV 3PL.SUB-INST-mouth-crazy 3POSS-friends
 'His friends began to make fun of him.'
37. *e:' choj chu: wa'chí' pa:tle'qe:pá*
 e:' choj chu: wa'chí' pa:tle'qé:-pa
 and now PTCL like.this happen-RPT
 'And now like this it happened again.'
38. *a'kxnika'tzá' xlan tzi:'swanitzá'*
 a'kxníka'=tza' i'x-la≡n tzi:'swáni=tza'
 when=now PST-be≡JUNCT be.night=now
 'When it finally became night...'

39. *yo:'qó'qo' wáli xla i'xmákni' sa'qá'qa' wampá*
 yo:'qó'qo' wan-lh=i i'x-la i'xmákni' sa'qá'qa' wampá
 light.skinned say-PFV=JUNCT PST-be 3POSS-body white once.again
 'he said his body was finally light skinned and white.'
40. *choj maqtín chu: wa'chí' kata'ampá i'xamígos*
 choj maq-tin chu: wa'chí' ka-ta-a'n-pa i'x-amígos
 now NUM.CLF-one PTCL like.this OPT-3PL.SUB-go-RPT:PFV 3POSS-friends
 'Now, one time, like that, his friends wanted to go again.'
41. *naklaqatín ka:'seqétni' taá'lh a'ntzá' lha: wa:'q seqét*
 nak=laqa-tín ka:'-seqét-ni' ta-a'n-lh a'ntzá'
 LOC=NUM.CLF-one PLC-grass-PL 3PL.SUB-go-PFV over.there
 lha: wa:'q seqét
 where all grass
 'They went to the pasture, over there, where there is a lot of grass.'
42. *a'ntzá' chon taá:lh i'xtantutunká'n*
 a'ntzá' choj=n ta-a'n-lh i'x-tan-tu'tun-ka'n
 over.there now=JUNCT 3PL.SUB-go-PFV 3POSS-NUM.CLF-three-PL.POSS
 'Over there, now the three of them went.'
43. *chu: wa'chí' pa:tle'qé:pa i'xamigoská'n wa'chí'n chi: wani:'t*
 chu: wa'chí' pa:tle'qé:-pa i'x-amigos-ka'n wa'chí'n chi:
 PTCL like.this happen-RPT 3POSS-friends-PL.POSS like.this=JUNCT PTCL
 wan-ni:'t
 be-PF
 'Like that, it happened again; his friends like that had been (changed).'
44. *se'qét wa'chí' lhkaya:'wá'j talaqó:lh xlaká'n*
 se'qét wa'chí' lhkaya:'wá'j ta-la-qo:-lh xlaká'n
 grass like.this dark.green 3PL.SUB-be-TOT-PFV PRN.3PL
 'Like that, they were totally green like the grass.'
45. *palajtunka'tzá' taxtapalí:lh i'xmákni'ká'n*
 palaj=tunka'=tzá' ta-x-ta-palí:-lh i'x-mak-ni'-ka'n
 fast=very=now 3PL.SUB-CNN-DCS-change-PFV 3POSS-body-PRT-PL.POSS
 'Quickly, now, their bodies changed.'
46. *chu: wa'chí'n pa:tle'qé:pán*
 chu: wa'chí'=n pa:tle'qé:-pa=n
 PTCL like.this=JUNCT happen-RPT=JUNCT
 'Like that, it happened again.'

47. *xla Jesus tzamá:' shulúk pus lha: la paláj xtapalí: xmákni'*
 xla Jesus tzamá:' shulúk pus lha: la paláj xtapalí:
 PRN.3SG Jesus that lizard well NEG do fast change
 i'x-mak-ni'
 3POSS-body-PRT
 'He, Jesus the chameleon, could not change his body quickly.'
48. *chu: wa'chí'n pa:tle'qé:pá*
 chu: wa'chí'≡n pa:tle'qé:-pa
 PTCL like.this≡JUNCT happen-RPT:PFV
 'Like that, it happened again.'
49. *lha: palájen taxa:pali:lh*
 lha: paláj≡in taxa:pali:-lh
 NEG fast≡JUNCT change-PFV
 'He could not change quickly.'
50. *chi: a'ntzá' chu: wa'chí' li:kilhchuya:paláka'*
 chi: a'ntzá' chu: wa'chí' li:-kilh-chuyá:-pala-ka'
 PTCL over.there PTCL like.this INST-mouth-crazy-RPT-IDF:PFV
 'And over there, like that, he was made fun of again.'
51. *li:kilhchuya:paláka' tzukúka' li:kilhchuya:kán*
 li:-kilh-chuyá:-pala-ka' tzukú-ka' li:-kilh-chuyá:-kan
 INST-mouth-crazy-RPT-IDF:PFV begin-IDF:PFV INST-mouth-crazy-IDF
 'He was made fun of and made fun of again.'
52. *e:' maqtín lha: tzamá:' xtayani'lh*
 e:' maq-tin lha: tzamá:' xtayá-ni'-lh
 and NUM.CLF-one NEG that take-DAT-PFV
 'And one time, he could not take it anymore.'
53. *chi: i'xli:máka lhu:wa'tzá' li:kilhchuya:kán*
 chi: i'x-li:-máka lhú:wa'=tza' li:-kilh-chuyá:-kan
 PTCL PST-INST-enough? a.lot=now INST-mouth-crazy-IDF:IMPF
 'How he had enough of being made fun of a lot!'
54. *chi: lha: la tamakxtapalí:*
 chi: lha: la ta-mak-xtapalí:
 PTCL NEG do DCS-body-change
 'How his body could not change!'

55. *tzukúlh li:sa:tlu:stí: tamakxtapali:ku'tún a'kxníka'*
 tzukú-lh li:-sa:-tlu:stí: ta-mak-xtapalí:-ku'tun a'kxníka'
 begin-PFV INST-force-turn? DCS-body-change-DSD when
 'So he began forcing (his body); he wanted to change (his) body when...'
56. *pus choj a'kxníka'*
 pus choj a'kxníka'
 well now when
 'well now when...'
57. *lha: wa'chí'n chi: kolór seqé:t walh i'xmákni'*
 lha: wa'chí'n chi: kolór seqé:t wan-lh i'x-mak-ni'
 when like.this PTCL color grass be-PFV 3POSS-body-PRT
 'When it seems like his body became the color of grass.'
58. *chi: li:sa:tlu:stí:lh li:sa:tlu:stí:lh*
 chi: li:-sa:-tlu:stí:-lh li:-sa:-tlu:stí:-lh
 PTCL INST-force-turn?-PFV INST-force-turn?-PFV
 'How he forced and he forced (his body to change)!'
59. *chu: pili'lh maklálh*
 chu: pili'-lh mak-la-lh
 how spotted-PFV body-be-PFV
 'How his body was spotted!'