TOPICS IN MOCHO' PHONOLOGY

AND MORPHOLOGY

by

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ABSTRACT

This dissertation is a grammatical description of several features of the morphology and phonology of the Mocho' language. Mocho' (Motozintleco) is a Mayan language spoken in the Chiapas region of Mexico near the border of Guatemala. It is moribund, with fewer than 30 remaining speakers, all over the age of 70 and bilingual in Spanish. Mocho' is a language with several features of interest, but which has not yet been the subject of a full linguistic description.

This dissertation, based on data collected during several field trips and supplemented with unpublished data from previous researchers, provides an overview of the grammatical structure of Mocho'. The topics covered include phonology, loanwords, root structure, derivation and inflection of the different word classes, and important discourse particles.

Mocho' is of special interest in Mayan linguistics as well as linguistic theory in general for many reasons. For example, Mocho' is one of only four Mayan languages to develop a tonal contrast; the Mocho' pattern is unique and has developed recently. Mocho' has several grammatical features which are unique in Mayan, including the development of middle voice from Proto-Mayan antipassive marking and the patterning of positionals, negatives, and syntactic markers of direction, location, and motion. Mocho' has a split ergative system, with ergative marking on third persons and

nominative-accusative marking on first and second persons. Mocho' also has unique patterns of definiteness and evidentiality. This dissertation provides a description of Mocho' morphological and phonological structure in several areas, including those described above.

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ABBREVIATIONS AND SYMBOLS

// x // ..... underlying form

~ .....alternates with, alternate form

[x] ..... PHONETIC FORM

/ x / ..... PHONEMIC FORM

< ..... COMES FROM

> .....BECOMES

A..... AGENT OR SUBJECT OF A TRANSITIVE VERB

ABSTR.N ..... ABSTRACT NOUN

AGT .....AGENTIVE

AJ ..... ADJECTIVE

AP ..... ANTIPASSIVE

asp .....ASPECT

AV ..... ADVERB

BGND..... BACKGROUND

C..... ANY CONSONANT

CMPL..... COMPLETIVE

COND .....CONDITIONAL

DEF..... DEFINITE

DET ..... DETERMINER

DIM ..... DIMINUTIVE

dir ..... DIRECTIONAL

DP ..... DISCOURSE PARTICLE

DUB ..... DUBITATIVE

ERG ..... ERGATIVE

excl ..... EXCLUSIVE

fut ..... FUTURE

hort ..... HORTATIVE

hyp ..... HYPOTHETICAL

IMPF ..... IMPERFECTIVE

INC ..... INCOMPLETIVE

indf ..... INDEFINITE

irr ..... IRREALIS

iv ..... INTRANSITIVE VERB

LIT. ..... LITERALLY

loc ..... LOCATIVE

MID ..... MIDDLE VOICE

N ..... NOUN

neg ..... NEGATIVE

num ..... NUMERAL

o ..... OBJECT OF A TRANSITIVE VERB

PERF ..... PERFECTIVE

PL ..... PLURAL

poss ..... POSSESSED

pot ..... POTENTIAL

PR ..... POSITIONAL ROOT

PREP ..... PREPOSITION

PRN ..... PRONOUN

PUNCT ..... PUNCTUAL

rep ..... REPORTATIVE

rn ..... RELATIONAL NOUN

S ..... SUBJECT OF INTRANSITIVE

sg ..... SINGULAR

SP. ..... SPANISH

S.O. ..... SOMEONE

S.T. ..... SOMETHING

su ..... SUBJECT OF TRANSITIVE OR INTRANSITIVE (IN GLOSSES)

T ..... TRANSITIVE ROOT

T ..... TRANSITIVE STEM

top ..... TOPIC

tv ..... TRANSITIVE VERB

V ..... ANY VOWEL

v ..... VERB (IN GLOSSES)

voice ..... VOICE AFFIX

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I would like to acknowledge a large debt of gratitude that is owed to the Mocho' people who have shared their language with me. This work would not have been possible without the courtesy and hospitality of my friends and teachers in Motozintla and Tuzantán, including in particular Isaac Juárez Ortíz, María Jiménez Mateo, Juan Méndez Matías, Flaviano Juárez Mateo Fausto López Martínez, Ana María López López, Ernesto Tovilla Rójas and Tamara Brennan. Funding for field research was provided by grants from the Jacobs Fund, American Philosophical Society Lewis and Clark Fund, and the National Science Foundation (Award #0513449).

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CHAPTER 1

THE MOCHO' LANGUAGE

1.1 Introduction

The aim of this dissertation is to provide a grammatical description of phonological and morphological topics in Mocho', a Mayan language of Mexico. Descriptive research on Mocho' is badly needed: while Mocho' is of special interest in Mayan linguistics and linguistic theory in general, there are no full phonological or grammatical descriptions of Mocho'.

Campbell (1988) noted several aspects of the Mocho' language that are of interest in Mayan studies, including the preservation of Proto-Mayan *ŋ* and *q* and the phonetic articulation of Proto-Mayan *b', the voiced bilabial implosive stop. In Mocho', *b'* is articulated differently than in many Mayan languages, in most environments being less strongly imploded (if at all) and partially devoiced. Information on Mocho' phonetics and phonology is detailed in Chapter 2.

Researchers have noted an incipient tonal contrast in Mocho' (Martin 1984, Campbell 1988:236, Antonio García Zúñiga, pc). Mocho' is one of four Mayan languages that have developed tone; the Mocho' tone has developed rather recently and the environment for the tonal contrast has some unique features. An exploration of this topic has the potential to contribute to the greater understanding of tonogenesis in general, and in Mayan languages in particular. The diachronic development of tone in

Mocho' is described in Chapter 3 along with a comparison of the tone systems in other Mayan languages.

From a historical comparative perspective, Mocho' provides crucial evidence for the reconstruction of Proto-Mayan (PM), as it is the only language of the Mayan family that has the reflex *č* of PM **r* where most others have *y* or *r*, and Mamean has *t* (see, e.g., Campbell 1988; Robertson 1977; Campbell and Kaufman 1985). The reconstruction of Proto-Mayan is particularly advanced, with few remaining uncertainties; however, Mocho' historical phonology is not yet completely understood. For example, there is variation in the reflexes of PM *CVHC and *CVHVC canonical forms (where C is any consonant, V is any vowel, and H is *h* or *ʔ*) for morphemes in Mocho' that needs to be explored in greater detail (Campbell 1988). A preliminary account of these is included in the topic of tonogenesis in Chapter 3.

The linguistic effects of the intense contact between Mocho' speakers and speakers of other languages need to be explored, and their study promises to contribute to the body of knowledge regarding language contact. In the region where Mocho' is spoken, there are distantly related languages that are quite different but have some unexpected shared features. For example, Q'anjob'alan (the branch to which Mocho' belongs) and Mamean languages are not more closely related than other branches of the Mayan family, but they share some phonological innovations such as PM **š* > *ṣ* (voiceless retroflex fricative) and PM **t* > *č* (voiceless alveopalatal affricate), which are probably due to extended contact among speakers (Kaufman 1976b). Mocho' also shares with Mamean and K'ichean languages the historical process of velar palatalization that is one of the phonological processes described in Chapter 2. The recent introduction of Spanish has complicated the sociolinguistic situation even further; the pattern of

phonological adaptation of Spanish loanwords in Mocho' interacts with the development of incipient tone in interesting ways as described in Chapter 4.

Mocho' is typologically interesting with regard to the development of the current grammatical system, particularly in the areas of ergative marking and grammatical voice. Larsen and Norman report Mocho' as the only Mayan language that has lost ergative marking in all but third person (1979), but Martin (1994a) indicates that the situation is more complex than previously reported. It is hoped that a description of the patterning of ergativity in the personal pronominal system in Mocho' will contribute valuable typological data regarding the processes of grammatical change; the split ergative alignment of Mocho' is included in Chapter 6. Mocho' also has a voice system unique among the Mayan languages, where Proto-Mayan antipassive marking developed into middle voice in Mocho', described in Chapter 9.

Several grammatical features in Mocho' are of interest within the Q'anjob'alan subgroup as well as in Mayan generally. Phonological and semantic factors can be identified in word formation and derivation, as outlined in Chapter 5. Nouns, nominal classes, and possession are detailed in Chapter 7. Mocho' has developed grammatically in several ways that are unique in Q'anjob'alan, including the patterning of positionals and adjectives (see Chapter 8) as well as negatives and syntactic markers of direction, location, and motion (see Chapter 10). All of the other Q'anjob'alan languages have noun classifiers, which Mocho' lacks, but it has been asserted that instead Mocho' has unique correlates of definiteness (Laura Martin, pc); some relevant discourse particles are described in Chapter 10. The following sections describe the social and geographic situation of Mocho' and previous research, both published and unpublished.

1.2 Mocho' in geographical perspective

Mocho' (also called Motozintleco or Cotoque[1] in some older work) is a Mayan language spoken in Chiapas, Mexico near the border of Guatemala, with the primary concentration of speakers in the town of Motozintla de Mendoza (see Figure 1.1)[2]; there are reports of speakers in the nearby towns of Tolimán, Buenos Aires, and Campana. Both the language and the ethnic group are identified as Mocho'; the native word for the language is *qatò:k*, literally 'our language' (note: the grave accent indicates falling pitch).

Estimates place the migration of Mocho' speakers into the area of Motozintla about 1200-1500 years ago; the Mocho' have been in contact with speakers of Mamean languages (Mam and Teco) since that time (cf. Kaufman 1976a; Martin n.d.). It is believed that the Mocho' population was always small, numbering no more than a few thousand at any one time (Martin n.d.); in 1769 the Mocho' were reported to have a total of 52 people in 22 families (Petrich 1985). The current population of ethnic Mocho' is unknown but probably no more than a few hundred. The language itself is moribund: there are likely fewer than forty remaining speakers of the language, and all are bilingual in Spanish and over the age of 70. The name Mocho' is viewed by some speakers as a reference to the socioeconomic status of the population; several speakers have indicated that "Mocho'" is from the negative verb *mo:cho'*, which means 'there aren't any' or 'nothing exists'.

Tuzanteco, a language variety related to Mocho', is spoken in Tuzantán, a town about two hours from Motozintla by bus. So little is known about Tuzanteco that it is not yet clear whether it is a dialect of Mocho' or a separate language. Phonologically the

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1 The term Cotoque (or Cotoque complex) is not widely used and includes both Mocho' and Tuzanteco, whose status as a language separate from Mocho' is still in question. It comes from [qato'k'], 'our language' (Kaufman 1976a).

2 Map image from http://maps.google.com/.

differences are small. In Mocho', PM **j* [x] and **h* [h] have merged to *j* while Tuzanteco preserves the distinction (Terrence Kaufman, pc). Mocho' has also innovated incipient tone and Tuzanteco has lost vowel length. Lexical and grammatical distinctions may be more complex; the description of Mocho' in the present work is a necessary first step in systematic comparison. The state of Tuzanteco is even more dire than that of Mocho', with fieldwork in 2009 yielding reports of fewer than five remaining fluent speakers, all over the age of 80. The only published work on Tuzanteco is an article by Schumann (1969) of 11 pages although Terrence Kaufman did fieldwork in 1968, recording texts and preparing a dictionary database.

1.3 Mocho' in historical perspective

Mocho' and Tuzanteco form a language complex that belongs to the Greater Q'anjob'alan branch of the Mayan family; the other Q'anjob'alan languages related most closely to Mocho' are Jakalteko, Akateko, and Q'anjob'al, and more distantly Chuj and Tojolab'al, as shown in Figure 1.2.

The tree in Figure 1.2 represents the position of Mocho' within the Mayan languages (see, e.g., Robertson 1992; England 1983; Campbell and Kaufman 1985; Kaufman 1976a). Schumann (1990) does not include Mocho' in the Q'anjob'alan group but regards it as a distinct subgroup of Mayan.

1.4 Prior research on Mocho'

1.4.1 Published research

The published work of prior researchers is described briefly in the following section. A bibliography of published materials on Mocho' is included in Appendix A. A

chapter in Campbell (1988) in English includes the only known colonial document in Mocho' with a paleography, annotation, and translation, along with a vocabulary list in Mocho' collected by Campbell. Campbell also lists the vocabulary forms from the data of Otto Schumann and Terry Kaufman, where available. The only other premodern materials on the language are from Sapper (1897:407-36; 1912), mostly just a wordlist that does not represent many important phonemic contrasts of the language.

Laura Martin has published several articles and book chapters in Spanish and English on Mocho' discourse (Martin 2003, 2000, 1997, 1994b, 1990a,b, 1989, England and Martin 2003, Martin and Méndez Matías 1989) and on aspects of the grammatical structure (1994a, 1998). She describes aspects of Mocho' discourse structure, such as parallelism and repetition (1990, 2000), retelling and the act of narration (1994b, 1997), and preferred argument structure (2003, England and Martin 2003).

Perla Petrich published some books and articles in Spanish on ethnographic and anthropological aspects of the language (1985a, 1985b, 1986, 1987, 1993, 1995). Petrich conducted fieldwork in the 1980s and focused on three topics: Mocho' worldview, culinary terms and the place of corn, and the compilation of a corpus of traditional oral narratives. Petrich (1985b) includes nine Mocho' texts with paragraph-level free translations in Spanish. Petrich (1995) contains six Mocho' texts with interlinear morphological glosses (in Spanish), Spanish translations, and linguistic notes. Although she does not provide extensive vocabulary lists, the publications do include a number of vocabulary terms interspersed throughout. Her publications provide a good foundation of cultural and other contextual information, particularly of the ethnographic details of the Mocho'.

Antonio García Zúñiga, a linguist formerly affiliated with INALI (a Mexican

governmental agency that promotes indigenous language efforts) and now at the Instituto Nacional de Antropología e Historia in the Yucatán, has produced various pedagogical works primarily geared towards children. He and Mocho' language teacher Victor Cruz have collaborated on some pedagogical works, including a Mocho' translation in a book for children with texts from six Mayan languages edited by CIESAS (2007). They have also authored a Mocho' alphabet pamphlet that is being printed and distributed upon request.

1.4.2 Unpublished research

The first significant fieldwork on Mocho' was conducted in 1967 when Terrence Kaufman compiled a preliminary dictionary and collected texts (cf. Petrich 1985:9, Kaufman 1967, Campbell 1988). Kaufman prepared a reasonably extensive Mocho' vocabulary that also includes about 20 pages of grammatical and phonological rules (1967). He did additional fieldwork in 1968 and compiled field notes while checking and expanding the dictionary entries. Ray Freeze traveled with Kaufman in 1968 and compiled an ethnobotanical vocabulary of Mocho', which has been added to Kaufman's database as part of the preparation of a Mocho' dictionary. Laura Martin is preparing a volume of narratives for publication that includes selected texts in Mocho', interlinear morphological glossing (in English and Spanish), free translations, information about the discourse structure, and a grammatical sketch of Mocho' of about 60 pages.

1.4.3 Recordings and unprocessed data

There are a number of Mocho' recordings, detailed below, most of which are being prepared for dissemination at the Center for American Indian Languages (CAIL) at

the University of Utah where they have been digitized and archived; they have also been archived at the Archive of Indigenous Languages of Latin America (AILLA) at the University of Texas. Lyle Campbell recorded two audio cassettes of lexical items in the late 1970s, which also include a small number of comparative words from the consultant's mother's "dialect" of Mazapa (Teco). In his 1967 fieldwork, Terrence Kaufman recorded both sides of five five-inch reels of texts that were transcribed by hand and annotated but not translated. He also compiled a dictionary database in Shoebox (software) format of about 5,000 lexical items.

Laura Martin compiled an extensive corpus of recordings of about 100 hours on audio cassettes collected between 1984 and 1995. The recordings include elicitation, word games, conversations, and texts (including elicitation of lexical items within a text and translations of the text). The text corpus includes multiple genres, multiple retellings, Spanish and Mocho' versions, and in most cases morphologically segmented transcriptions. Martin also created electronic versions of Kaufman's texts, adding translations for each word and in some cases morphologically glossed transcriptions and translations as well. All of Martin and Kaufman's audio recordings were digitized and are archived at CAIL and AILLA.

Antonio García Zúñiga and others have made audio and video recordings of cultural and linguistic material in Mocho' and Spanish since 1998, with the aim of creating pedagogical materials and a cultural dictionary. He estimates that the audio recordings number more than 100 cassettes. Finally, Elisabeth Norcliffe made some recordings (seven texts) during a pilot field trip in the summer of 2006.

1.5 Methodology

The data for the present work was collected over several months by the author from 2007-2009 with funding from the Jacobs Fund, the American Philosophical Society, and assistance from the National Science Foundation. Phonological and vocabulary elicitation sessions were conducted with eleven speakers in their homes in Motozintla de Mendoza. Texts were collected from seven speakers. Text genres included recipes, procedurals, traditional stories, description of everyday life, ethnobotanical and herbal traditions, narration of pictures or visual prompts, and oral histories, with an emphasis on individual oral histories. Texts were given first as a whole in Mocho'. Then a free translation was given by the narrator in Spanish. An elicitation session followed each recording of a text, with prompts from the Spanish or Mocho' version of the text. Due to time constraints, not all texts could be fully transcribed and translated; so texts were selected for transcription and translation with a view to the broadest coverage of topics, genres, and speakers possible.

Transcription was done by the author with a fluent Mocho' speaker using Elan linguistic software on a laptop computer. The text was segmented into breath groups, each breath group was played for the consultant. The consultant repeated the segments in Mocho' multiple times until the transcription was judged accurate, and then provided a translation in Spanish for the entire breath group. Translations for individual words were provided by consultants as needed as part of the translation process.

Grammatical information was gleaned from texts and direct elicitation sessions. Although several consultants provided some amount of grammatical information, the majority of grammatical and lexical elicitation was conducted with six consultants with whom the author met regularly during fieldwork seasons. All sessions (text collection

and elicitation) were recorded in audio, and copies of recordings were provided to consultants. In addition, several oral histories and traditional narratives were recorded in video and copies provided to individual consultants and the Mocho' community organization.

1.6 Typological overview

Mocho' has a glottalized consonant series and phonemic vowel length; long vowels also have contrastive pitch in stressed syllables. In common with other Mayan languages, most Mocho' roots have a (C)VC or (C)VCVC structure (with (C)VC more common). Verbs and positional roots require a formative suffix.

Inflectional elements are prefixed and suffixed and derivational elements are suffixed. Roots are inflected with prefixes for aspect and person (including nominal possessor), and suffixes for mode, plural person, and indication of noun classes of obligatory or expected possession. Derivational suffixes include valency-increasing suffixes such as causative and valency-decreasing suffixes such as passive and middle voice as well as several suffixes that derive parts of speech.

The following is a template for noun inflection (see Chapter 7):

(POSSESSOR) - Root - (PL PERSON) - (POSSESSION CLASS)

Nouns and adjectives are marked with person suffixes for equational statements such as 'he is a teacher' or 'the flowers are pretty'.

The following is a template for verb inflection (intransitive verbs are not marked for object, ergative or voice; see Chapters 6 and 9 for verb inflection):

(ASP)- ASP - ERG - SUBJ - Root - FORMATIVE - (VOICE/MODE) - OBJ - (PL PERSON)

Mocho' has nominative-accusative alignment for first and second person and

ergative-absolutive alignment for third person. Neutral word order is VOS. Aspect is indicated by prefixes to the verb and by particles within the sentence. Mood is indicated by suffixes to the verb. Tense not indicated directly, but may be inferred from aspect morphology and adverbials with the exception of two aspectual proclitics that indicate both tense and aspect.

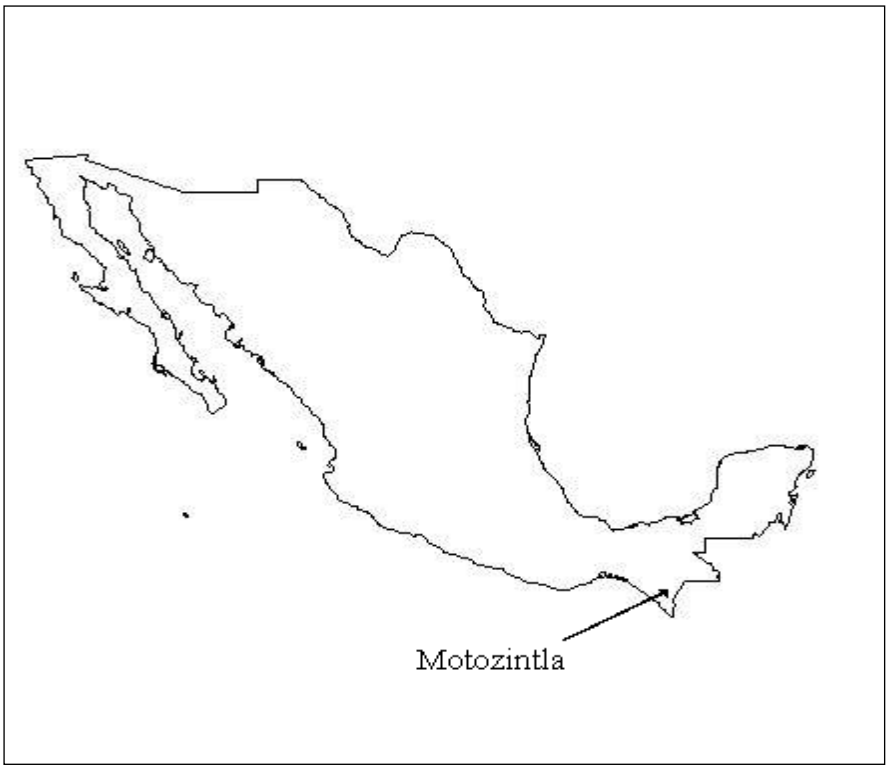

Figure 1.1 Location of Motozintla

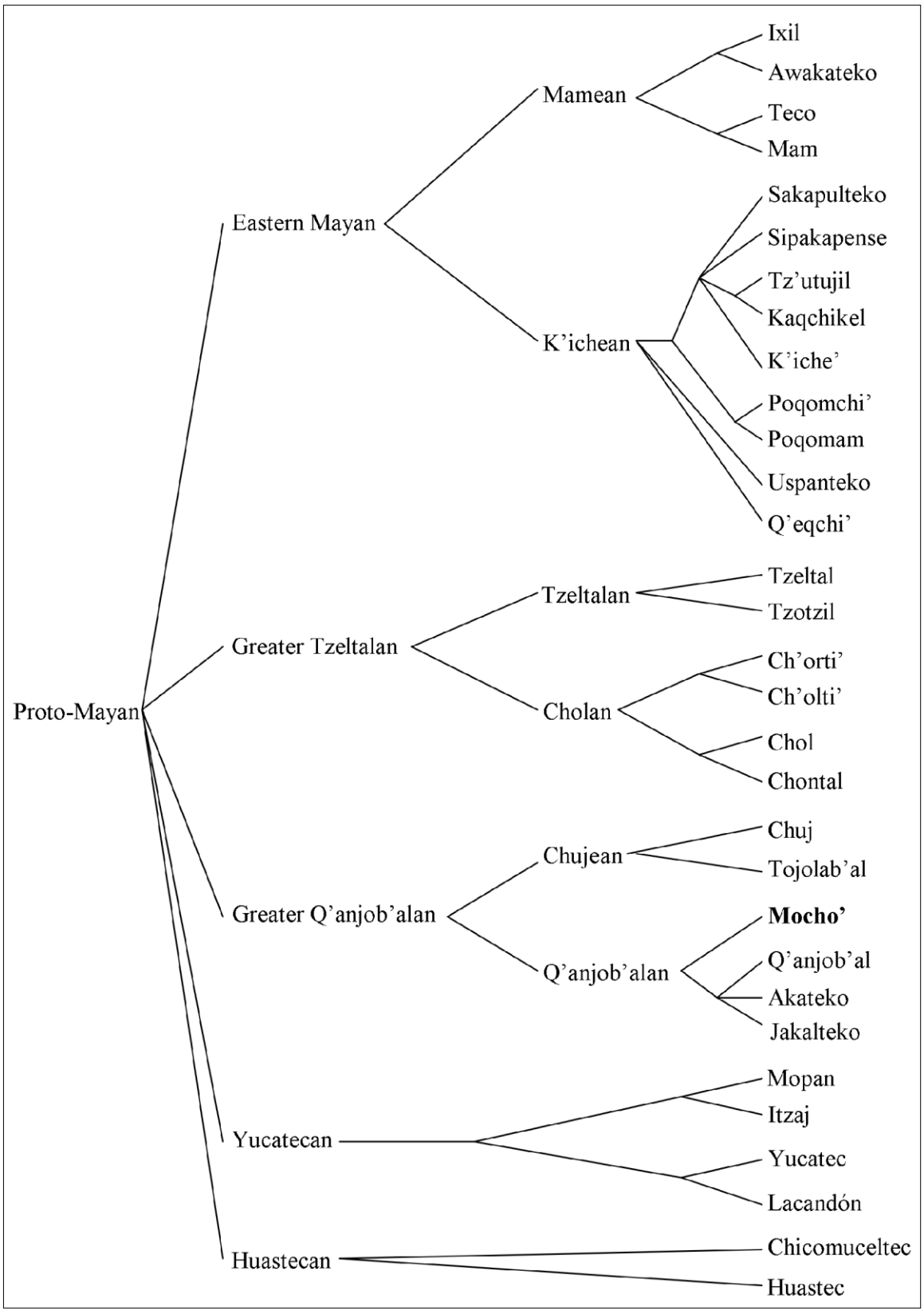

Figure 1.2. Mayan language family tree (modified from Campbell and Kaufman 1985).

CHAPTER 2

MOCHO' PHONOLOGY

2.1 Introduction

This chapter describes the phonology of Mocho'. Mocho' phonological structure has much in common with other Mayan languages but has some unique features of interest including the development of an incipient tonal contrast and the manifestation of vowel length. Of historical interest, Mocho' has retained the velar/uvular stop contrast of Proto-Mayan (PM) as well as the velar nasal *ŋ*, and is the only Mayan language that has the alveopalatal affricate [*č*] as a reflex of PM **r*. This chapter describes the phonemic inventory and orthography, syllable structure, stress, and common phonological and morphophonological processes.

2.2 Phonemic inventory

The phonemic inventory of Mocho' and examples illustrating these sounds are presented in a practical orthography with the exception of vowel length, which is represented with a colon (long vowels are represented in the orthography with two

vowels).[3] The orthography has been adopted from that developed by the Proyecto Lingüístico Francisco Marroquín, is used by the Oklajuuj Keej Maya'Ajtzíib' for the representation of Mayan languages of Guatemala, and has been sanctioned legally by the government of Guatemala for the representation of Guatemalan Mayan languages. Corresponding phonetic representations are included when appropriate for clarification of detail using standard American usage phonetic representation (e.g., as presented in Pullum and Ladusaw 1996 with the exception of the voiceless dental affricate, which is represented with *ts*).

2.2.1 Consonants

Table 2.1 shows the phonemic inventory of native Mocho' consonants. In the chart, the phonetic representation is given in square brackets when it differs from the orthographic representation. When differentiation is necessary in the text, orthographic representations are placed between angled brackets (as in <x>) and phonetic representations are placed between square brackets ([x]). The sounds in parentheses in Table 2.1. appear only in loan words.

2.2.1.1 Plain stops

The voiceless stops [p, t, k, q] can occur in all positions in a word; they are aspirated word-finally.

<p> is a voiceless bilabial stop. Examples with *p* are given in (1) - (7).

(1) **p**à:q' [pà:q'] 'green bean'

3 Several morphophonological processes in Mocho' are related to vowel lengthening.

(2) **p**a:lach [pa:lač] 'male turkey'

(3) k'ex**p**u [k'ešpuʔ] 'to change'

(4) lu:**p**i [lu:pi] 'he jumped'

(5) **p**ojo**p** [poxop^{h}] 'hammock'

(6) ma(:)**p** [ma:p^{h}] 'coyol palm tree'

(7) tz'ila**p** [ts'ilap^{h}] 'dirt (on body)'

<t> is a voiceless dental stop. Examples with *t* are given in (8) - (12).

(8) **t**un [tun] 'older brother; uncle'

(9) **t**a'inh [taʔiŋ] 'money'

(10) te**t**e [tɛtɛʔ] 'here'

(11) wi:**t**ooj [wi:to:x] 'my husband; my companion'

(12) tù:**t** [tù:t^{h}] 'bean(s)'

<k> is a voiceless velar stop. Examples with *k* are given in (13) - (18).

(13) **k**ù:**k** [kù:k^{h}] 'squirrel'

(14) **k**e:j [kɛ:x] 'deer'

(15) sa**k**wi [sakwi] 'he/she/it was born'

(16) tu:nu**k** [tu:nuk^{h}] 'female turkey'

(17) i:b'à:**k** [ʔi:bà:k^{h}] 'my brother-in-law (of man)'

(18) se(:)**k** [sɛ:k^{h}]'dish, bowl'

When *k* occurs in the same root syllable as a uvular consonant and is preceding that consonant, it is palatalized [k^{y}] (and represented in the orthography as <ky>), as in (19).

(19) **ky**aq' [k^{y}aq'] 'red' //kaq'//

<q> is a voiceless uvular stop. In word-final position, it is either aspirated or articulated as a fortis voiceless uvular fricative [χ]; it is often articulated as a fricative when it is phrase-final. Examples with *q* are given in (20) - (25).

(20)	**q**ab'ò:x	[qabò:š]	'our tortillas'
(21)	**q**anaj	[qanax]	'afternoon, late'
(22)	ma:**q**i	[ma:qi]	'he/she/it (a)rose'
(23)	mu**q**ul	[muqul]	'young woman'
(24)	ò:**q**	[ʔò:q^{h}] ~ [ʔò:χ]	'coyote'
(25)	sa**q**	[saq^{h}] ~ [saχ]	'white'

2.2.1.2 Glottalized stops

The bilabial glottalized stop is voiced when not word-final and imploded and devoiced word-finally; the other glottalized stops in Mocho' are voiceless and ejective. At the beginning of a word, glottalized stops are fortis. Intervocalically and word-finally, glottalized stops are pronounced with less force and may sound like unreleased plain stops in word-final position in rapid speech.

<b'> is a voiced bilabial stop [b] at the beginning of words and is voiceless and slightly imploded [ɓ̥] at the end of words. Word-medially it is usually a plain voiced stop but occasionally is slightly imploded, particularly when preceded or followed by a consonant. It is cognate with the voiced bilabial implosive stop that is imploded much more forcefully in most other Mayan languages (Campbell 1988:236); for this reason it is included in the glottalized series and represented orthographically as <b'>, as in the orthographies for other Mayan languages. Examples with *b'* are given in (26) - (31).

(26) **b'**à:j [bà:x] 'gopher'

(27) **b'**ij [bix] 'name'

(28) i:**b'**o:y [ʔi:bo:y] 'armadillo'

(29) na:**b'**a [na:baʔ] 'just, no more than' (>Spanish *nada mas*)

(30) q'a**b'** [q'aɓ̰] 'hand'

(31) wa:nha**b'** [wa:ŋaɓ̰] 'town'

<t'> is a voicelss glottalized dental ejective. As in other Mayan languages, it is not a common sound in Mocho' and is found only in a few words in noninitial position. Examples with *t′* are given in (32) - (35).

(32) **t'**onh [t'oŋ] 'frog'

(33) **t'**asa:n [t'asa:n] 'naked' (Kaufman 1967)

(34) **t'**ù:q [t'ù:q] 'wet' (Kaufman 1967)

(35) ju:**t'**i' [hu:t'iʔ] 'to run up a steep grade' (Kaufman 1967)

<k'> is a voiceless glottalized velar stop. Examples with *k′* are given in (36) - (41).

(36) **k'**um [k'um] 'squash'

(37) **k'**è:n [k'ɛ̀:n] 'cave'

(38) **k'**ol**k'**ò:ch [k'olk'òč] 'egg'

(39) wu**k'**a [wuk'aʔ] 'I drank it'

(40) u**k'** [ʔuk'] 'louse'

(41) i:**k'** [ʔi:k'] 'chile'

As with other velars, when *k′* precedes a uvular consonant in a root, it is palatalized [kʸ'], as in (42).

(42) i:**k'y**aqa [ʔi:kʸ'aqa] 'I cut it (a tree)' //i:k'aqa//

<q'> is a voiceless glottalized uvular stop. Examples with *q′* are given in (43) - (48).

(43) **q'**ach [q'ach] 'earth'

(44) **q'**ò:ch [q' ò:č] 'corn flour paste'

(45) b'a:**q'**ech [ba:q'eč] 'meat'

(46) kwa**q'**a [kwaq'aʔ] 'I'm going to give it'

(47) **q'**a:**q'** [q'a:q'] 'fire'

(48) chu**q'** [chuq'] 'worm'

In word-medial position *q′* is often lenited to a glottal stop, particularly in rapid speech, as illustrated in (49).

(49) cha**q'**a [čaq'a] ~ [čaʔa] 'PAST PROGRESSIVE' (gloss from Kaufman 1967)

<'> is the orthographic representation of glottal stop [ʔ]. All vowel-initial words have a preceding phonetic glottal stop that is not represented orthographically. However, an initial glottal stop is phonemic in some roots, which can be seen because they take the consonant-initial prefix series, as in (50) and (51). The initial glottal stop in these examples contrasts with the one in (52) that takes a separate set of person prefixes unique to vowel-initial roots (see Section 2.5.3). Examples with initial glottal stops are given in (50) - (52).

(50) **'**onh [ʔoŋ] 'go' (cf. *ki:'onh* 'I'm going to go')

(51) **'**u:b' [ʔuɓ] 'quail' (cf. *i:'u:b* 'my quail')

(52) o:nh [ʔo:ŋ] 'avocado' (cf. *wo:nh* 'my avocado')

Intervocalic glottal stops are often not fully articulated; in such circumstances

they are perceived as laryngeal constriction on the vowel. Intervocalic glottal stops that are not associated with morpheme boundaries or grammaticalized forms are rare, due to historical factors (see Section 3.2). Examples with intervocalic and word-final glottal stops are given in (53) – (56).

(53) tz'a**'**ik [ts'aʔik] 'heat, day'

(54) wa**'**ich [waʔič] 'old man'

(55) b'i**'** [biʔ] INDEF, REP

(56) ja**'** [jaʔ] 'water'

2.2.1.3 Affricates

<tz> is the orthographic representation of a voiceless dental affricate [ts]. Examples with *tz* are given in (57) – (61).

(57) **tz**ì:m [tsì:m] 'long gourd'

(58) **tz**u:b'o:m [tsu:bo:m] 'small green tree lizard'

(59) pi:**tz**in [pi: tsɪn] 'lizard'

(60) ki:mel**tz**i [ki:meltsi] 'I will return'

(61) wi**tz** [wits] 'hill; hilltop'

<ch> is the orthographic representation of a voiceless alveopalatal affricate [č]. Examples with *ch* are given in (62) – (67).

(62) **ch**ò:w [čò:w] 'blanket'

(63) **ch**ita:m [čita:m] 'wild pig'

(64) ma**ch**in [mačin] 'monkey'

(65) mo:**ch**o' [mo:čoʔ] NEG 'no (hay)'

(66) ù:c**h** [ʔù:č] 'opossum'

(67) na:**ch** [na:č] 'DIR:into'

2.2.1.4 Glottalized affricates

<tz'> is the orthographic representation of a glottalized dental affricate [ts']. Examples with *tz'* are given in (68) – (73).

(68) **tz'**a'ik [ts'aʔik] 'heat, day'

(69) **tz'**ikin [ts'ɪkɪn] 'hen'

(70) moj**tz'**i [moxts'i] 'she got married'

(71) wi:**tz'**a [wi:ts'a] 'I know it'

(72) soo**tz'** [so:ts'] 'bat'

(73) taja:**tz'** [taxa:ts'] 'frog'

<ch'> is the orthographic representation of the glottalized alveopalatal affricate [č']. Examples with *ch'* are given in (74) – (79).

(74) **ch'**olol [č'olol] 'toad'

(75) **ch'**à:w [č'à:w] 'small tamale'

(76) wa:**ch'**a [wa:č'aʔ] 'very'

(77) xpo:**ch'**e [špo:č'ɛʔ] 'they kill(ed) it; it kill(ed) them'

(78) xi:**ch'** [ši:č'] 'barn owl'

(79) jù:**ch'** [hù:č] 'the third grinding of corn' (Kaufman 1967)

2.2.1.5 Fricatives

<s> is a voiceless dental/alveolar fricative. Examples with *s* are given in (80) – (85).

(80)	**s**o:tz'	[so:ts']	'bat'
(81)	**s**i:nà:m	[si:nà:m]	'crab'
(82)	**s**i**s**ì:m	[**s**i**s**ì:m]	'a medicinal herb'
(83)	wo:k**s**a'	[wo:ksaʔ]	'I put it on (clothing)'
(84)	i:**s**	[ʔi:s]	'potato'
(85)	mi**s**	[mis]	'cat'

<x> is the orthographic representation of the voiceless alveopalatal fricative [š]. Examples with *x* are given in (86) – (91).

(86)	**x**è:n	[šè:n]	'mosquito'
(87)	**x**i:ch'	[ši:č']	'barn owl'
(88)	i:**x**ì:m	[ʔi:šì:m]	'corn'
(89)	i**x**oq	[ʔišoq]	'woman'
(90)	pi**x**	[piš]	'tomato'
(91)	b'ò:**x**	[bò:š]	'tortilla'

<j> is the orthographic representation of the voiceless velar fricative [x]. The actual pronunciation of this phoneme is [h] word-initially; word-medially it varies between the velar [x] and laryngeal fricative [h], with the velar pronunciation [x] more frequent between vowels. Compare, for example, (95) and (96) to (94), where *j* is laryngeal fricative [h] preceding a consonant. Word-finally *j* is a velar fricative [x] and

is usually articulated forcefully (fortis) with noticeable frication. Examples with *j* are given in (92) – (98).

(92) **j**ube**j** [hubɛx] 'flower'

(93) **j**u:ne' [hu:nɛʔ] 'one'

(94) a**j**wa:l [ʔahwa:l] 'boss, patron'

(95) la**j**an [laxan] '(be) equal'

(96) k'a:**j**ol [k'a:xol] 'man's child(ren)'

(97) pachi:**j** [pachi:x] 'of yore, before'

(98) wa**j** [wax] 'father'

2.2.1.6 Nasals

<m> is a voiced bilabial nasal. Examples with *m* are given in (99) – (103).

(99) **m**o:no' [mo:noʔ] 'there is/are none'

(100) **m**a:qi [ma:qi] 'ascended'

(101) i:**m**aja [ʔi:maja] 'I looked for it'

(102) **m**ì:**m** [mì:m] 'mother'

(103) tzì:**m** [tsì:m] '(jícara) gourd'

<n> is a voiced dental nasal. Examples with *n* are given in (104) – (109).

(104) **n**u'ul [nuʔul] 'younger sister, younger brother'

(105) **n**a' [naʔ] 'older sister, aunt'

(106) u**n**e' [unɛʔ] 'infant'

(107) a**n**at [ʔanat] 'old woman'

(108) tu**n** [tun] 'older brother, uncle'

(109) ch'o:jo**n** [č'o:xon] 'mouse, rat'

<ñ> represents the palatalized nasal [ɲʸ]. It occurs in only one environment in native Mocho' words: in roots preceding uvular consonants (with an intervening vowel) as a result of a phonological process in that velar consonants preceding uvular consonants are palatalized and the velar nasal *nh* [ŋ] is also fronted. However, *ñ* also occurs in Spanish loanwords where it is not confined to this position and thus has phonemic status in classical phonemic terms. It is a relatively rare sound and is limited in distribution to word-intial and word-medial environments. Examples with *ñ* are given in (110) – (112); (112) is a loanword from Spanish.

(110) **ñ**oqlob' [ɲʸoqloɓ] 'shoulder'

(111) **ñ**iq [ɲʸiq] 'fresh-corn tortilla' (Sp. 'tortilla de elote')

(112) ku**ñ**à:da [kuɲʸà:ða] 'sister-in-law' (Sp. 'cuñada')

<nh> is the orthographic representation of the velar nasal [ŋ]. Examples with *nh* are given in (113) – (118).

(113) **nh**u:b [ŋuɓ] 'smoke'

(114) **nh**aj [ŋax] 'house'

(115) le**nh**u [lɛŋuʔ] 'make tortillas'

(116) wa**nh**ab [waŋaɓ] 'town'

(117) o:**nh** [ʔoŋ] 'avocado'

(118) q'i**nh** [q'iŋ] 'festival day'

2.2.1.7 Glides, laterals, and rhotics

Glides and liquids (laterals and rhotics) occur in all positions in the word. Glides are devoiced when they occur in word-final position.

<w> is a labio-velar glide that is voiced in initial and word-medial position and voiceless word-finally. Examples with *w* are given in (119) – (124).

(119) **w**a'ich [waʔič] 'old man'

(120) **w**i:k'uj [wi:k'ux] 'brush'

(121) a**w**al [awaḽ] 'harvest'

(122) ista**w**i [ʔɪstawi] 'find'

(123) chò:**w** [čò:w] 'blanket'

(124) aja:**w** [ʔaxa:w] 'month'

<y> is the voiced palatal glide that is voiceless word-finally. Examples with *y* are given in (125) – (131).

(125) **y**o' [yoʔ] 'where'

(126) **y**u:x [yu:š] 'saint'

(127) **y**a [ya] 'because'

(128) tzo:**y**ol [tso:yol] 'chayote squash'

(129) i:se:**y**ub' [ʔi:sɛ:yuɓ] 'my liver'

(130) i:b'o:**y** [ʔi:boy] 'armadillo'

(131) paqa**y** [paqay] 'guapinol tree' (Kaufman 1967)

<l> is a dental lateral that is voiceless word-finally. Examples with *l* are given in (132) – (137).

(132) **l**o'o [loʔo] 'eat (general)'

(133) **l**ajunhe' [laxuŋɛʔ] 'ten'

(134) i:kpa:**l**ej [ʔi:kpa:lex] 'my (male) companion (said by a man)'

(135) wu:**lul** [wu:lul] 'a corn drink' (pusunque)

(136) cha:**l** [ča:l] 'offspring (of female)'

(137) xkì:**l** [škì:l] 'cockroach' (Sp. 'cucaracha chica')

2.2.1.8 Nonnative consonants

<b> is a voiced bilabial stop found in Spanish loans, which seems in most cases to have merged with the native Mocho' voiced implosive bilabial stop <b'> (see Section 2.2.1.2). <d> is a voiced dental stop found in Spanish loanwords. It is lenited to a voiced interdental approximant [ð] when it occurs between vowels (as is the case in Spanish). Examples with *d* are given in (138) - (139).

(138) **d**iyà:blo [diyà:blo] 'devil' <Sp. *diablo*

(139) pe**d**à:so [pɛðà:so] 'piece' <Sp. *pedaso*

<g> is a voiced velar stop found in Spanish loanwords. Examples with *g* are given in (140) – (141).

(140) **g**à:nso [gà:nso] 'goose' <Sp. *ganso*

(141) i:**g**à:na [ʔi:gà:na] 'I like it' <Sp. *gana*

<f> is a voiceless labiodental fricative found in Spanish loanwords. Examples with *f* are given in (142) – (143).

(142) **f**ì:nka [fì:ŋka] 'plantation'<Sp. *finca*

(143) ka**f**e [kafɛ] 'coffee' <Sp. café

<r> is a voiced dental tap [ɾ] between vowels and a trill [r] in initial and final position or following consonants; although it is not a native Mocho' consonant it shares features of the approximants native to Mocho': it is voiced in initial position and

voiceless word-finally.[4] Examples with *r* are given in (144) – (146).

(144) **r**an [ran] 'frog' >Sp. *rana*

(145) p**r**iyò:ste [priyò:stɛ] 'a civic community steward' <Sp. *prioste*

(146) pè:**r**o [pè:ɾo] 'but' <Sp. *pero*

2.2.2 Vowels

Vowels contrast in length and long vowels have a pitch (tonal) contrast when in stressed position (see Section 2.3.3). The Mocho' vowels are given in Table 2.2 (note: the grave accent indicates falling pitch).

Any vowel that occurs at the beginning of a word is proceeded phonetically by a glottal stop, which due to its predictable and phonetic nature is not represented in written forms of the examples. When a word-initial glottal stop is represented in the written form it indicates that glottal stop has phonemic status, as described in Section 2.5.3.

There is some variation in vowel length in stressed syllables: stressed short vowels can be lengthened when a word is isolated or phrase-final and emphasized for affect; thus, the determination of vowel length for word-final suffixes can be problematic. Following is a description of the articulation of vowels with accompanying examples.

<i>, <i:>, and **<ì:>** are high front vowels. [i] is often lax [ɪ] when it is unstressed, short, and not word-final. Examples with *i* are given in (147) - (154).

(147) **i**xoq [ʔišoq] 'woman'

(148) **i**staw**i** [ʔɪstawi] 'find'

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4 This is not completely congruent with the "r" sounds of native Spanish. Word-initially and word-finally the borrowed "r" sounds in Mocho' match the local Spanish; however, intervocalically Spanish contrasts flapped /r/ [ɾ] (orthographically a single <r> in Spanish) and trilled /r̃/ [r] (orthographically <rr>).

(149) m**i**s [mis] 'cat'

(150) jw**i**s [hwis] 'very'

(151) ch**i**k**i**n [čɪkɪn] 'ear'

(152) ch'**i**' [číʔ] 'dog'

(153) ch**i**la [čila] 'he sees it'

(154) b'**i**' [biʔ] REPORTATIVE

Examples with *i:* are given in (155) - (161).

(155) **i:**k [ʔi:k] 'chile'

(156) **i:**nhat [ʔi:ŋat] 'race, lineage, seed'

(157) x**i:**ch' [ši:č'] 'barn owl'

(158) w**i:**k'uj [wi:kúx] 'brush' Sp. 'monte'

(159) w**i:**tz'a [wi: tsá] 'I know it'

(160) s**i:**' [si:ʔ] 'firewood'

(161) t**i:**' [ti:ʔ] 'lip, mouth'

Examples with *ì:* are given in (162) - (163).

(162) **ì:**t [ʔì:t] 'food'

(163) xk'**ì:**l [škì:l] 'cockroach'

(164) ix**ì:**m [ʔi:šì:m] 'corn'

Minimal and near-minimal sets for *i*, *i:*, and *ì:* are given in (165) - (167).

(165) **i**s=k'aq [ʔisk^{y}'áq] 'fingernail'

(166) **i:**s [ʔi:s] 'potato'

(167) **ì:**s [ʔì:s] 'lazy person' (Sp. 'haragán')

<e>, <e:>, and <è:> are mid front lax vowels [ɛ], [ɛ:], and [ɛ̀:], respectively.

Examples with *e* are given in (168) - (173).

(168) **e**lq'om [ʔɛlq'om] 'thief'

(169) k**e**re:m [kɛrɛm] 'young man'

(170) k**e**n**e**' [kɛnɛʔ] 'stay'

(171) wa:ch**e**j [wa:čɛx] 'sleepiness'

(172) nh**e**j [ŋɛx] 'tail'

(173) w**e** [wɛ] 'DEFINITE, FOCUS'

Examples with *e:* are given in (174) - (181).

(174) **e:**wi:' [ʔɛwi:ʔ] 'yesterday'

(175) **e:**li [ʔɛ:li] 'leave'

(176) k**e:**j [kɛ:x] 'deer'

(177) k'**e:**jan [k'ɛ:xan] 'many'

(178) ker**e:**m [kɛrɛ:m] 'young man'

(179) chib'**e:**l [čibɛ:l] 'under him, under it'

(180) tentel**e:**' [tɛntɛlɛ:ʔ] 'chachalaca hen'

(181) t**e:**' [tɛ:ʔ] 'tree'

Examples with *è:* are given in (182) - (183).

(182) x**è:**n [šɛ̀:n] 'mosquito'

(183) k'**è:**n [k'ɛ̀:n] 'cave'

Minimal and near-minimal sets for *e*, *e:*, and *è:* are given in (184) - (185). No minimal pairs were found for *e:* and *è:*.

{e, e:}

(184) t**e**' [tɛʔ] 'here'

(185) t**e:**' [tɛ:ʔ] 'tree'

<a>, <a:>, <à:> are low central vowels [a], [a:], and [à:], respectively. Examples with *a* are given in (186) - (194).

(186) **a**n**a**t [ʔanat] 'old woman'

(187) **a**w**a**l [ʔawal] 'the sowing' (Sp. 'siembra')

(188) k**a**ch [kač] 'fish'

(189) nh**a**j [ŋax] 'house'

(190) chek'**a**n [čɛ:k'an] 'only'

(191) q**a**n**a**j [qanax] 'late; afternoon'

(192) y**a** [ya] 'because'

(193) j**a**' [jaʔ] 'water'

(194) i:m**a**j**a** [i:maxa] 'I looked for it'

Examples with *a:* are given in (195) - (200).

(195) '**a:**j**a:**l [ʔa:xa:l] 'work (NOUN)'

(196) **a:**l [ʔa:l] 'child of female'

(197) x**a:**q [ša:q] 'leaf'

(198) k'**a:**jol [k'a:xol] 'child of man'

(199) chit**a:**m [čita:m] 'peccary'

(200) saql**a:**j [saqla:x] 'early'

Examples with *à:* are given in (201) - (203).

(201) p**à:**q' [pà:q'] 'green bean'

(202) ch**à:**w [čà:ʷ] 'tamale'

(203) si:n**à:**m [si:nà:m] 'scorpion' (Sp. 'alacrán')

Minimal and near-minimal sets for *a*, *a:*, and *à:* are given in (204) – (213).

{a, a:}

(204) s**à:**m [sà:m] 'comal'

(205) x**a:**m [ša:m] 'tip'

{a, a:}

(206) **a:**l [ʔa:l] 'child of woman'

(207) **à:**l [ʔà:l] 'heavy'

{a, a:, à:}

(208) k'**a**nh [k'aŋ] 'loud, open, high'

(209) k**à:**nh [kà:ŋ] 'sky'

(210) ka:nh- [ka:ŋ-] 'four'

{a, a:, à:}

(211) chab'- [čaɓ-] 'they say'

(212) cha:b' [ča:ɓ] 'nose'

(213) chà:b' [čà:ɓ] 'nance fruit' (*Byrsonima crassifolia*)

<o>, <o:>, <ò:> are mid rounded back vowels [o], [o:], and [ò:], respectively. Examples with *o* are given in (214) - (220).

(214) **o**xe' [ʔošɛʔ] 'three'

(215) '**o**nh [ʔoŋ] 'go'

(216) x**o**l [šol] 'sprout, shoot'

(217) j**o**k**o**x [hokoš] 'big ant'

(218) y**o**' [yoʔ] 'where'

(219) ch**o** [čo] 'that (which)'

(220) kurij**o'** [kuɾixoʔ] 'let's go'

Examples with *o:* are given in (221) - (227).

(221) **o:**nh [ʔo:ŋ] 'avocado'

(222) **o:**jà:n [ʔo:xà:n] 'iguana'

(223) i:b'**o:**y [ʔi:bo:y] 'armadillo'

(224) m**o:**cho' [mo:čoʔ] 'NEG' 'no (hay)'

(225) n**o:**k [no:k] 'DIR.over.there'

(226) p**o:**xo' [po:šoʔ] 'again'

(227) qatz'**o:**m [qats'o:m] 'teacher'

Examples with *ò:* are given in (228) - (231).

(228) **ò:**q [ʔò:q] 'coyote'

(229) ch**ò:**w [čò:w] 'blanket'

(230) b'**ò:**x [bò:š] 'tortilla'

(231) k'olk'**ò:**ch [k'olk'ò:č] 'egg'

Minimal and near-minimal sets for *o*, *o:*, and *ò:* are given in (232) – (236).

{o, o:}

(232) **o**nh [ʔoŋ] 'he went'

(233) **o:**nh [ʔo:ŋ] 'avocado'

{o, o:, ò:}

(234) -**o**q [-ʔoq] 'foot'

(235) **ò:**q [ʔò:q] 'coyote'

(236) **o:**q'- [ʔo:q-] 'to cry'

<u>, <u:>, <ù:> are high rounded back vowels [u], [u:], and [ù:], respectively.

Examples with *u* are given in (237) - (242).

(237) **u**k' [ʔuk'] 'louse'

(238) **u**ne' [ʔunɛːʔ] 'infant'

(239) **u**l**u**l [ʔulul] 'corn masa drink'

(240) ch**u**q' [čuq'] 'worm'

(241) j**u**b'ej [hubɛx] 'flower'

(242) lenh**u** [lɛŋu] 'make tortillas'

Examples with *u:* are given in (243) - (246).

(243) **u:**x [ʔuːš] 'meat'

(244) k'**u:**m [k'uːm] 'ayote squash'

(245) j**u:**ne [huːnɛʔ] 'one'

(246) chu'**u:**j [čuʔuːx] 'because of this'

Examples with *ù:* are given in (247) - (249).

(247) **'ù:**ch [ʔùːč] 'pig'

(248) k**ù:**k [kùːk] 'squirrel'

(249) qat**ù:**t [qatùːt] 'our bean(s)'

Minimal and near-minimal sets for *u*, *u:*, and *ù:* are given in (250) - (251). No minimal pairs were found for *u* and *u:* or *u* and *ù:*.

{uː, ùː}

(250) **u:**x [ʔuːš] 'meat'

(251) **'ù:**ch [ʔùːč] 'pig'

2.3 Stress and pitch

2.3.1 Stress

Mocho' stress is regular and falls on the last syllable of the word. The primary correlate of stress in Mocho' is falling pitch for long marked tone vowels and peak (high) pitch of the word for short vowels and plain long vowels, which is further described in the following sections. Although stressed syllables may have increased relative intensity, differences in loudness are difficult to identify or perceive. Stressed syllables are also often lengthened, but length is more difficult to perceive as length modulation is also manipulated to show affect. Although stress is described in the scope of single-word stress, the realm of stress marking extends to the phonological phrase that can include one or more "words" as traditionally defined.

2.3.2 Pitch

2.3.2.1 Short vowels

Short vowels have level or rising pitch, which seems to depend in part on the length of the utterance and the position of the vowel in relation to stress. Unstressed short vowels usually have level pitch throughout the syllable. Stressed short vowels generally have a fairly level pitch or a slightly rising pitch. When syllables are lengthened for affect or focus, for example, the vowel is more likely to have a greater pitch rise. Whether or not the pitch is level, a stressed short vowel will have the highest pitch in the word. Examples of monosyllabic words with short vowel nuclei are given in

(252) - (254) along with examples of pitch tracks in Figures 2.1 - 2.3.[5]

(252) mis [mis] 'cat'

(253) chuq' [čuq'] 'worm'

(254) kach [kač] 'fish'

In polysyllabic words, stressed short vowels generally have a level or rising pitch that is higher than the preceding syllables (when the effect of consonantal place of articulation is taken into account). The amount of pitch rise is variable and can be close to level, but short vowels are rarely pronounced with falling pitch regardless of word position or stress. When stressed short vowels are lengthened for affect, they can have markedly rising pitch. Unstressed short vowels are generally level and often have the a higher pitch than the vowel in the preceding syllable.

Examples of short vowels in disyllabic words are given in (255)-(259) and shown with pitch tracks in Figures 2.4 - 2.8.

(255) ajan [axan] 'ear of corn'

(256) tz'ikin [ts'ikin] 'hen'

(257) ch'olo:l [č'olo:l] 'toad'

(258) wichma:l [wičma:l] 'my husband' (*w-ichm-a:l* 1SG.POSS-old.man-POSS)

(259) b'a:lam [ba:lam] 'jaguar'

5 Pitch tracks were created automatically with the Praat software for acoustic analysis.

2.3.2.2 Long vowels

Stressed plain long vowels have a rising pitch or a level high pitch. The pitch rise in these syllables can be steep or more gradual, but some amount of rise is usually found in stressed plain long vowels. Unstressed long vowels are level or slightly rising, as shown in the pitch tracks for the examples in this section. Monosyllabic words with plain long vowels are given in (260) - (262) and shown with pitch tracks in Figures 2.9 - 2.11.

(260) cha:l [ča:l] 'her child (of woman)' (*ch-a:l* 3POSS-child.of.female)

(261) 'u:b' [ʔu:ɓ] 'quail'

(262) so:tz' [so:ts'] 'bat'

Examples of long vowels in polysyllabic words are given in examples (263) – (266) and shown with pitch tracks in Figures 2.12 - 2.15.

(263) po:xo:m [po:šo:m] 'curer' (*po:x-o:m* medicine-AGT)

(264) pi:tzin [pi:tsin] 'lizard'

(265) kele:m [kele:m] 'rooster'

(266) ja:b'i:l [xa:bi:l] 'year' (*ja:b-i:l* year-ABSTR.N)

An example of a polysyllabic word with with unstressed long vowels is given in (267) and shown with accompanying pitch track in Figure 2.16.

(267) i:k'a:jo(:)l [ʔi:k'a:xo:l] 'my child (of man)' (*i:-k'a:jo(:)l* 1SG.POSS-offspring)

2.3.2.3 Long vowels with falling pitch

Long vowels with falling pitch are only found in stressed syllables. The pitch is sometimes level at onset then falling but is very often a contour pitch, rising and then falling. Long vowels with falling pitch are reflexes of Proto-Mayan *VʔC sequences (see

Chapter 3). Monosyllabic words with long vowels with falling pitch are shown in examples (268) - (270) and illustrated with pitch tracks in Figures 2.17 - 2.19.

(268) pà:q' [pà:q'] 'green bean'

(269) b'ò:x [bò:š] 'tortilla'

(270) ò:q [ʔò:q] 'coyote'

A contour pitch (rising then falling) in a monosyllabic utterance is very common for these marked long vowels as can be seen in Figure 2.18 *bò:x* 'tortilla'; generally, the pitch at the end of the syllable is lower than the pitch at onset. Monosyllabic utterances with a long vowel with falling pitch often begin with lower pitch than monosyllabic utterances with short vowels or long vowels with rising or level pitch. In polysyllabic words, the pitch in these long falling vowels often rises quickly to be markedly higher than the pitch in the preceding syllables, then falls. Examples (271)-(273) show long vowels with contrastive falling pitch in disyllabic words with pitch tracks shown in Figures 2.20 - 2.22.

(271) ixì:m [ʔišì:m] 'corn'

(272) i:b'à:k [ʔi:bà:k] 'my brother-in-law (of man)'

(273) si:nà:m [si:nà:m] 'scorpion'

2.3.3 Tonal contrast

A tonal contrast has been proposed for Mocho' long vowels (Campbell 1988; Martin 1984; Palosaari Fox 2008). The tonal contrast is correlated with stress, as long vowels with falling pitch are only found in stressed syllables. The diachronic

development of tone is addressed in Chapter 3. The remainder of this section proceeds with a synchronic description of tone.

Figure 2.23 compares the pitch tracks for the forms *wa:q′* [wa:q'] 'my tongue', which has a long vowel with unmarked pitch, and *pà:q′* [pà:q'] 'green bean', which has a long vowel with marked falling pitch.

The primary unmarked correlate of stress was described in Section 2.3.2.1 as the peak pitch in the word, which can also be accompanied by syllable lengthening and increased intensity. However, vowels with inherent falling pitch are also stressed, making falling pitch a second correlate of stress. Falling pitch is considered marked because it is limited in distribution and can be shown diachronically to be an innovation (see Chapter 3). Falling pitch is only found in syllables in stressed position and is neutralized in any other position; for example, when a suffix is added to a lexical item with falling pitch in the final syllable, that syllable no longer has falling pitch but is pronounced as a plain long vowel, as in (274a) - (b).

(274) (a) p**ò:**x [pò:š] 'medicine'

(b) p**o:**x-o:m [po:šo:m] 'curer, healer' (Sp. 'curandero') (medicine-AGT)

It can be seen in Figures 2.24 and 2.25 that the pitch of *pò:x* 'medicine' is falling in the stressed position of the monosyllabic utterance in (274a) but remains level in (274b) when the syllable in question is not the final syllable in the word (and therefore not stressed).

Examples (275a)-(b) and Figures 2.26 and 2.27 compare the difference in pitch when stress shifts from the content syllable of mì:m 'mother' to the first person exclusive suffix when possessed. The pitch of the root *mì:m* 'mother' differs markedly when in

stressed position, as in Figure 2.26 and unstressed position, as in Figure 2.27. In Figure 2.26, the pitch of the root is contoured, first rising and then falling; while in Figure 2.27 the pitch of the root is level at the beginning of the word with a rise in the final syllable.

(275) (a) a:mì:m [ʔa:mì:m] 'your mother' (*a:-mì:m-Ø* 2POSS-mother-SG)

(b) qami:mo:' [qami:mo:ʔ] 'our mother' (*qa-mì:m-o:'* 1PL.POSS-mother-1EXCL)

Mocho' verbs have a formative suffix after the root (other suffixes are also possible), which neutralizes any potential pitch contrast. The pitch contrast is, therefore, only found in nominals, which often have few suffixes. The pitch contrast is lexically distinctive, as multiple minimal pairs can be found that differ only in the pitch of the long vowel (as shown in Section 2.1.2). However, the minimal pairs that can be found are generally monosyllabic words, as in the sets presented in (276) - (279).

(276) (a) ì:s [ʔì:s] 'lazy person' (Sp. 'haragan')

(b) i:s [ʔi:s] 'potato'

(c) is=kyaq [ʔis=kʸaq] '(finger)nail'

(277) (a) chab [čaɓ] 'crab'

(b) chà:b [čà:ɓ] 'nance fruit' (a tree of Mesoamerica)

(c) cha:b [ča:ɓ] 'his nose' (*ch-a:b* 3POSS-nose)

(278) (a) kà:nh [kà:ŋ] 'sky'

(b) k'anh [k'aŋ] 'loud'

(c) ka:nh- [ka:ŋ] 'four'

(279) (a) onh [ʔoŋ] 'he goes'

(b) o:nh [ʔo:ŋ] 'avocado'

2.4 Phonological structure

2.4.1 Root structure

Most Mocho' roots are (C)VC or (C)VCVC (where V can represent a long or short vowel). Notable exceptions are particles, loanwords (see Chapter 4), onomatopoeic words (particularly animal names), and grammaticalized forms, which may have consonant clusters. Affixes may be CV or VC or V.

Examples of Mocho' roots are given in (280) - (285).

(C)VC

(280) nhaj	[ŋax]	N 'house'	CVC
(281) i:s	[ʔi:s]	N 'potato	VC
(282) qi:l-	[qi:l]	V 'to run'	CV:C

(C)VCVC

(283) i:xì:m	[ʔi:ši:m]	N 'corn'	VCVC
(284) kele:m	[kele:m]	N 'rooster'	CVCVC
(285) lupup-	[lupup]	V 'to fly'	CVCVC

Loanwords and onomatopoeic words may have many more syllables than other Mocho' words. Examples (286) and (287) are of loanword root structures, and (288)-(290) are of onomatopoeic words. Many onomatopoeic words are names of animals, as in (288) - (290).

(286) mansanaj	[mansanax]	'apple' <Sp. *mansana*	CVCVCVC
(287) pa:tanux	[pa:tanuš]	'banana' <Sp. *platanos*	CV:CVCVC
(288) su:rukuk	[su:rukuk]	'owl' 'tecolotillo'	CV:CVCVC

(289) polpolowex [polpoloweš] '*type of bird*'(pomporrin) CVCCVCVCVC

(290) tu:kuruju' [tu:kuruxuʔ] 'barn owl' 'tecolote' CV:CVCVCVC

2.4.2 Syllable structure

Syllable nuclei in Mocho' consist of a long or short vowel. Syllables with more than one consonant in the coda are not found in Mocho'. Syllables with more than one consonant in the onset are only found word-initially across morpheme boundaries; that is, when prefixes come before a consonant-initial stem as in (291).[6]

(291) xmì:m [šmì:m] 'his mother' (*x-mì:m* 3POSS-mother)

Example (292) shows a highly unusual complex word-initial consonant cluster of three consonants resulting from a possessive prefix combined with a Spanish loan, which is further described in Section 4.4.

(292) xkpa:lej [škpa:lex] 'his (male) companion'<Sp. 'compadre'

(*x-kpa:lej* 3POSS-companion)

Deletion of unstressed vowels can result in consonant clusters in the middle of words, a process described in Section 2.5.7. Word-medial consonant clusters are limited to two consonants that are assigned to different syllables, as in (293).

(293) qapa**tn**i:no:' [qa.pat.ni:.no:ʔ] 'our cornfield'

//*qa-patan-i-:n-o:'*//

1PL.POSS-cornfield-V-MID-1EXCL

Thus, Mocho' syllables can be VC, CV, CVC, or #CCVC (where # represents a

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6 A single exception has been found in the data, in that a Mocho' word has a CC onset that is not due to a morpheme boundary (but is still word-initial): *hwis* 'very'.

word boundary); rarely, exceptional words have syllables of the structure #CCCV, but these have only been found in two loanwords (cf. (292). The following sections proved examples of the structure of licit affixes, roots, and words found in Mocho'. If only one form for a root structure is given, it is the only example that could be found in the data. Long and short vowels are addressed separately.

2.4.3 Phonological shape of affixes and clitics

The possible phonological shapes of affixes and clitics in Mocho' are illustrated by the following examples, and include -V, V:- -V(:), V(:)C, or CV(:). No examples of V- prefixes were found.

-V

(294) -u	[u]	verbal formative suffix
(295) -a	[a]	verbal formative suffix
(296) -i	[i]	verbal formative suffix
(297) -o	[o]	irrealis, verbal formative suffix
(298) -e	[e]	verbal formative suffix

V:-

(299) i:-	[ʔi:]	1sg person prefix
(300) a:-	[ʔa:]	2sg person prefix

-V:

Only one example of a -V: suffix was found, shown in (300).

(301) -o:'	[o:ʔ]	1pl person

C-

(302) j-	[x]	perfective aspect
(303) k-	[k]	potential aspect
(304) ch-	[č]	incompletive aspect; 3sg person prefix

-C

(305) -x	[š]	intransitive reflexive/ingressive (Kaufman 1967)
(306) -j	[x]	passive

-VC

(307) =a'	[aʔ]	backgrounding clitic

-V:C

(308) -i:l	[i:l]	ordinal numeral formation suffix
(309) -o:n	[o:n]	middle voice suffix
(310) -a:n	[a:n]	adjective formation suffix

CV-

(311) ma=	[ma]	negative proclitic
(312) ni=	[ni]	aspect proclitic
(313) b'a=	[ba]	conditional proclitic
(314) qa-	[qa]	1PL person prefix for consonant-initial roots
(315) qe-	[qe]	3PL person prefix for consonant-initial roots

-CV

(316) -sa	[sa]	causative suffix
(317) -le	[le]	verb-forming derivational suffix
(318) =ni	[ni]	aspect enclitic

(319) =je [xe] backgrounding clitic

CV:-

(320) mu:= [mu:] negative proclitic

CC-

(321) chk- [čk] imperfective progressive aspect

2.4.4 Morphologically simple word structures

The following examples illustrate the possible syllable structures of Mocho' roots, which can be CV, CV(:)C, V(:)C, CCVC (a single example), V(:)CV(:)C, or CV(:)CV(:)C. Vowel-final roots (CV(:)CV) are found only in loans.

CV

(322) ya [ya] 'because'

(323) xi [ši] 'go'; *V*, auxiliary verb

(324) chu [ču] 'because (of)' *AJ*

CVC

(325) q'eq [q'eq] 'black' *AJ*

(326) maq [maq] 'up (there)' *DIR*

(327) t'onh [t'oŋ] 'frog' *N*

(328) nonh [noŋ] 'he went' *V*

VC

(329) uk' [ʔuk'] 'louse' *N*

(330) oq [ʔoq] 'foot' *N*

CV:C

(331) te:' [te:ʔ] 'tree' *N*

(332) q'a:q' [q'a:q'] 'fire' *N*

(333) na:ch [na:č] 'into' *DIR*

(334) sì:k [sì:k] 'cold' *AJ*

V:C

(335) ì:s [ʔì:s] 'lazy person' Sp. 'haragán' *N*

(336) a:l [ʔa:l] 'child, baby (of woman)' *N*

CCVC

(337) jwis [xwis] 'very' *AV*

CVCV (in loans)

(338) kafe [kafe] 'coffee'< Sp. 'café' *N*

CV:CV (in loans)

(339) pè:na [pè:na] with difficulty, barely' *AV* < Sp. 'apénas'

(340) lè:xa [lè:ša] NAME < Sp. 'Teresa'

VCVC

(341) ajan [ʔaxan] 'ear of corn' *N*

(342) ixoq [ʔišoq] 'woman' *N*

V:CVC

(343) inhat [ʔiŋat] 'seed' *N*

(344) e:qan [ʔe:qan] 'tomorrow' *AV*

VCV:C

(345) ixì:m [ʔišì:m] 'corn' *N*

V:CV:C

(346) e:wi:' [ʔe:wi:ʔ] 'yesterday' *AV*

(347) a:ja:l [ʔa:ja:l] 'work' *N*

CVCVC

(348) muqul [muqul] 'young woman' *N*

(349) tz'a'ik [ts'aʔik] 'day, heat' *N,AJ*

(350) qanaj [qanaj] 'late; afternoon' *AV*

CV:CVC

(351) k'e:jan [k'e:xan] 'many' *AJ*

(352) pi:tzin [pi:tsin] 'lizard' *N*

(353) wi:k'uj [wi:k'ux] 'brush' *N*

CVCV:C

(354) kele:m [kele:m] 'rooster' *N*

(355) chita:m [čita:m] 'peccary' Sp. 'tlakwache' *N*

(356) pachi:j [pači:j] 'before' *AV*

2.4.5 Phonological shape of morphologically complex words

The following section includes some examples of the syllable structures of morphologically complex words with the intention of illustrating the phonological structure found in fully inflected forms (as compared with roots). Notably lacking are the word structures CVCV: or CV:CV:, since suffixes and particles do not have final long vowels with the exception of *–o:* '1EXCL', which requires a person prefix. These

examples are intended to be illustrative. Not all possible word structures over three syllables in length are included.

V:CV

(357) e:li [ʔe:li] 'he came' *IV* (e:l-i *come-IV*)

CVCV

(358) chik'a [čik'a] 'he carries (it)' *TV* (ch-ik'-a *3SG.INC-carry-TV*)

(359) kene [kene] 'he stayed' *IV* (ken-e *stay-IV*)

CV:CV

(360) wi:tz'a [wi:ts'a] 'I knew it' *TV* (w-i:tz'-a *1SG-knew-TV*)

(361) ma:qi [ma:qi] 'it rose' *IV* (ma:q-i *rise-IV*)

(362) ju:ne' [xu:neʔ] 'one' *NUM* (ju:n-e *one-NUM*)

V:CVC

(363) i:nhaj [ʔi:ŋax] 'my house' *N* (i:-nhaj *1SG-house*)

VCCV:C

(364) elq'o:m [ʔelq'o:m] 'robbers' *N* (eleq-o:m *stolen.goods-AGT.N*)

CVCVCVC

(365) kurijo' [kurixoʔ] 'let's go' *IV* (kur-i-jo' *go-IV-HORT*)

CV:CV:CV

(366) ch'a:jo:ni [č'a:xo:ni] 'she is washing it' *IV* (ch'a:j-o:n-i *wash-MID-IV*)

CCV:CV:CV

(367) chb'e:je:ni [čbe:xe:ni] 'he is walking' *IV* (ch-be:j-e-:n-i *3ERG.INC-path-V-MID-IV*)

2.4.6 Summary of syllable structure

In summary, Mocho' roots have closed final syllables, with the exception of loans, onomatopoeic forms, and discourse particles, which are often clitics. Vowel-final words are found in loans, particles, and inflected or derived verb forms.

2.5. Phonological and morphophonological processes

2.5.1 Palatalization

Velar consonants are palatalized when they precede a uvular consonant. This is likely not productive and limited to consonants within a root. (Note: palatalization is represented orthographically with "y".) Consonants that are palatalized include *k*, *k'*, *nh* [ŋ], and *j* [x]; *nh* is also fronted.

(368) kyaq [kʸaq] 'red'

(369) k'yaq [k'ʸaq] 'flea'

(370) ñoqlob' [ɲʸoqlob] 'shoulder'

Variably, *j* [x] can be palatalized when it precedes a uvular consonant, as in (371).

(371) ka:jiq' [ka:xʸiq'] ~ [ka:xiq'] 'wind'

The consonant *j* [x] can also variably cause palatalization of preceding velar consonants, as in (372).

(372) nhej [ɲʸej] ~ [ŋej] 'tail'

Velar palatalization is found in other Mayan languages that are not closely related to Mocho': namely, K'ichean and Mamean languages (Campbell 1974, 1977). The presence of velar palatalization in Mocho' is an interesting topic worthy of further study:

particularly the exploration of whether velar palatalization came into Mocho' through contact (cf. Kaufman 1969; Campbell 1974, 1977).

2.5.2 Nasal assimilation

Nasals assimilate to the place of articulation of a following consonant. This process is one of total place assimilation, as illustrated in (373a-d). In (373a-b), the dental nasal *n* of the middle voice suffix is shown before a dental consonant and a vowel; in (373c) the underlying //n// is assimilated to the place of articulation of the following uvular consonant of the person suffix *-qe*[7], and in (373d) the nasal is assimilated to a following bilabial consonant *b'*.

(373) /-(o):n/ 'middle voice'

(a) i:k'o**n** si:'	[ʔi:k'on si:ʔ]	'he brings firewood'
(b) ch'a:jo:**n**i'	[č'a:xo:niʔ]	'she washed'
(c) chi:k'o**nh**qe si:'	[či:k'oŋqɛ si:ʔ]	'they bring firewood'
(d) k'u:xu:**m**b'al	[k'u:šu:mba:l]	'the resultant pain'

In (374), the underlying velar nasal is assimilated to the place of articulation of the following dental consonant when the intervening vowel is destressed and deleted upon the addition of the possessive suffix.

(374) /i:ŋat/

(a) inhat	[ʔi:ŋat]	'race, seed'
(b) qi:**n**ti:lo	[ʔi:nti:lo]	'our race' //q-inhat-i:l-o//

7 This assimilation is likely to the uvular place of articulation, but as the uvular nasal is not phonemically contrastive, it is represented as velar in the orthography.

2.5.3 Glottal stop deletion

Word-final glottal stop is not found when a word is in a phonological phrase with a following consonant-initial word. Final glottal stop deletion can have some effects on the grammatical structure. For example, completive or incompletive status is often signaled redundantly through the use of glottal stop (cf. Martin 1994a); this marker is often lost due to the glottal stop deletion process. Another problem posed by the process of glottal stop deletion is ascertaining the phonological form of particles. As presented in Section 2.4, one exception to the consonant-final structure of uninflected forms in Mocho' is the class of discourse particles, which are often CV in form.

(375) we [weʔ] DEFINITE MARKER 'the'

(376) la [laʔ] CONJUCTION 'and'

As word-final glottal stop is deleted when a word is in a phonological phrase with a following word it is not completely clear whether the glottal stop is present in the underlying form. Examples (377) and (378) show the differing forms of the definite particle we' when followed by consonant-initial or vowel-initial words.

(377) **we** bu:ruj ch-wa'-i [we bu:rux čwaʔi]

DEF burro INC-eat-IV

'the burro is eating'

(378) lo'o **we'** u:x [loʔo weʔ u:š]

CMPL.eat DEF meat

'he ate the meat'

2.5.4 Consonant deletion

Prefixes with the phonological form of *ch-/x-* (with functions including third person ergative, nominal possessor, and incompletive aspect) are deleted before coronal fricatives and affricates (*s*, *x*, *tz*, *tz'*, *ch*, *ch'*). Compare (379) and (380), which have the third person prefixes (*ch-/x-*), to (381) and (382), which have no prefixes but are nevertheless possessed.

(379) **ch**-ixì:m	[čiši:m]	**3**-corn 1SG-father	'his corn'
(380) **x**-b'à:k	[šbà:k]	**3**-brother.in.law	'his brother-in-law'
(381) **Ø**-tzoyol-a:l	[tsoyola:l]	**3**-chayote-POS	'her chayote'
(382) **Ø**-so:tz' i:-waj	[so:ts' ʔi:wax]	**3**-bat 1-father	'my father's bat'

In addition, velar consonants in prefixes do not appear preceding roots that begin in a uvular consonant: thus, the potential aspect prefix *k-* never appears before a root beginning with *q-* or *q'-*. Although this is likely a phonological constraint, it has a bearing on the distribution of aspect prefixes (see 9.4.2).

2.5.5 Vowel harmony and disharmony

Minor vowel harmonic and disharmonic patterns are found in Mocho'; namely, vowels in some suffixes assimilate or dissimilate to the quality of a preceding root vowel. These processes are described in the following sections.

2.5.5.1 Vowel harmony

Verb formative suffixes that are high vowels become mid vowels if the preceding root vowel has the same front or back quality; this affects the formative suffixes *-i*

'intransitive' and *-u* 'transitive instrumental'. Thus, *-i* becomes *-e* following roots with *e* and *-u* becomes *-o* following roots with *o*, as in the following examples (see Section 5.3 for further discussion).

(383) ma:q-i [ma:qi] 'ascend-IV'

(384) oq'-i [ʔoq'i] 'cry-IV'

(385) lup-i [lupi] 'jump-IV'

(386) ken-e [kene] 'stay-IV'

(387) b'e:j-e [be:xe] 'road-IV' (walk)

(388) kux-u [kušu] 'bite-TV'

(389) qil-u [qilu] 'run-TV'

(390) tzaq-u [tsaqu] 'grind corn-TV'

(391) lok-o [loko] 'capture-TV'

(392) lo'-o [loʔo] 'eat.general-TV'

The process of harmonic stem vowel selection is likely not productive. For example, harmonic vowels are not selected with roots that have been grammaticalized after vowel deletion, as shown for the root *meltz-* 'return' in (393), which occurs with *-i* rather than the harmonic *-e*. The consonant cluster in the root *meltz-* is likely due to vowel deletion (see Section 2.5.7) and subsequent grammaticalization.

(393) meltz-i [meltsi] 'return-IV'

2.5.5.2 Vowel disharmony

In some nouns, the possessed form takes a required suffix of the form *-V:l*, where *-V:* is either *-a:* or *-i:* depending on whether the root vowel is low or nonlow: *-i* is used

when the low vowel *a* is the vowel of the root preceding the suffix and *-a:* is used for all other vowels (see Section 7.2.1).

(394) (a) q'ach [q'ač] 'earth'

(b) x-q'ach-i:l [šq'ači:l] 'their land' (3POSS -earth-POSS)

(395) (a) tanh [taŋ] 'lime'

(b) x-ta:nh-i:l [štaŋi:l] 'our lime' (3POSS -lime-POSS)

(396) (a) pix [ʔik'] 'tomato'

(b) x-pi:x-a:l [špi:ša:l] 'our tomatoes' (3POSS -tomato-POSS)

(397) (a) ik' [ʔik'] 'chile'

(b) ch-i:k'-a:l [čʔik'a:l] 'our chiles' (3POSS -chile-POSS)

When there is more than one vowel in the root, the last vowel is the basis for the disharmonic process, as illustrated in (398) and (399).

(398) (a) jub'ej [xubex] 'flower'

(b) x-jub'ej-**a:**l [šxubexa:l] 'our flowers' (3POSS -flower-POSS)

(399) (a) tzoyol [tsoyol] 'chayote squash'

(b) Ø-tzoyol-**a:**l [tsoyola:l] 'our chayote squash' (3POSS -chayote-POSS)

2.5.6 Vowel lengthening

Some suffixes cause the root vowel to be lengthened. For example, suffixes on Class B nouns (see Chapter 7) lengthen root vowels as in (400) and (401).

(400) (a) **i**k' [ʔik'] 'chile'

(b) ch-**i:**k'-a:l [čʔik'a:l] 'our chile(s)' (3POSS -chile-POSS)

(401) (a) **a**nat [ʔanat] 'old woman'

(b) w-**a:**nt-i:l [wa:nti:l] 'my wife' (1SG.POSS -old.woman-POSS)

In other noun classes, derivational suffixes such as middle voice (:n/-o:n) and agentive (*-o:m*) are often accompanied by the lengthening of the root vowel while inflectional suffixes do not cause vowel lengthening, as is seen in examples (402) - (404) for the root *q'atz-* 'teach'. Example (403) has a short root vowel with the first person singular object suffix *-qin*, while the same root in (404) has a long vowel with the agentive suffix *-o:m*.

(402) q'atz-	[q'ats]	teach	'to teach'
(403) q'atz-a-qin	[q'atsaqin]	teach-TV-1SG.O	'he taught me'
(404) q'**a:**tzo:m	[q'a:tso:m]	teach-AGT.N	'teacher'

Vowels in stressed syllables are also often lengthened for affect or emphasis. This lengthening can cause problems in perceiving vowel length, particularly between suffixes with short and long vowel distinctions, such as the first person plural exclusive *-o:'* and the first person dual *-o'* described in earlier work on Mocho' (cf. Kaufman 1967, Martin 1994a).

2.5.7 Vowel deletion

Vowels in syllables that are not in initial or final position are subject to deletion, as shown in (405) - (407) for the root *pata:n* 'cornfield'.

(405) pata:n	[pata:n]	'cornfield' (N)
(406) patn-i	[patni]	cornfield-IV 'clearing a cornfield'

(407) qa-pa:tn-i-:n-o:' [qapa:tni:no:ʔ]

1PL-cornfield-IV-VOICE-1EXCL

'We are clearing the cornfield'

Vowels are only deleted if the deletion does not compromise CVC syllable structure. Phonological processes that are dependent on the deleted vowel still take place. (That is, in traditional generative phonology, those processes would be ordered first, before vowel-deletion takes place.) For example, in (408), the vowel of the disharmonic possessive suffix *-i* is selected according to the deleted vowel *a* in the root //*inhat*// as described in 2.5.5.

(408) inhat [ʔiŋat] 'race, seed'

(409) q-i:n_t-i:l-o [qinti:lo:ʔ] //q-inhat-i:l-o//

1PL-race-POSS-1EXCL

'our race, our seed'

Stem-forming suffix vowels are deleted if they are followed by a vowel-initial suffix, as in (410a-c) and (411a-d).

(410) (a) wa:ch-i [wa:či] sleep-IV

(b) wa:ch-Ø-o [wa:čo] sleep-IV-IRR //wa:ch-i-o//

(c) wa:ch-Ø-e:j [wa:če:x] sleep-IV-ABSTR.N //wa:ch-i-o//

(411) (a) wa'-i [waʔi] eat-IV

(b) wa'-Ø-o [waʔo] eat-IV-IRR //wa'-i-o//

(c) qa-wa'-i-qe' [qawaʔiqeʔ] 1PL-eat-IV-1PL.INCL

(d) qa-wa'-Ø-o:' [qawaʔo:ʔ] 1PL-eat-1EXCL //qa-wa'-i-qe//

In (411a), the intransitive formative vowel *–i* was retained before the consonant-

initial first person inclusive person suffix, while in (411b) the stem-forming suffix was deleted preceding the vowel of the first person exclusive suffix.

2.6 Summary of Mocho' phonology

Mocho' phonological structure has much in common with other Mayan languages, but also has some interesting features. Concerning the phonological inventory, the Mocho' bilabial implosive is imploded much less forcefully than most Mayan languages, and in many positions is likely not imploded at all. Mocho' also has a tonal contrast in long vowels in stressed position, with a phonemic distinction between long vowels with falling pitch and long vowels with peak pitch in the word. Mocho' has some tendencies toward harmonic and disharmonic patterns in suffix vowel selection. Mocho' has a (likely nonproductive) process of velar palatalization that is also found in Mamean and K'ichean languages. Finally, Mocho' has processes of vowel deletion and vowel lengthening that interact with morphological factors.

Table 2.1 Mocho' consonants

Consonants						
	labial	dental	alveopalatal	velar	uvular	glottal
stops	p	t		k	q	
glottalized stops	b'	t'		k'	q'	' [ʔ]
voiced stops		(d)		(g)		
affricates		tz [ts]	ch [č]			
glottalized affricates		tz' [ts']	ch' [č']			
fricatives	(f)	s	x [š]	j [x]		
nasals	m	n	ñ [ɲ]	nh [ŋ]		
glides	w		y			
liquids		l				
rhotics		(r)				

Table 2.2 Mocho' vowels

Vowels	
i i: ì:	u u: ù:
e e: è:	o o: ò:
a a: à:	

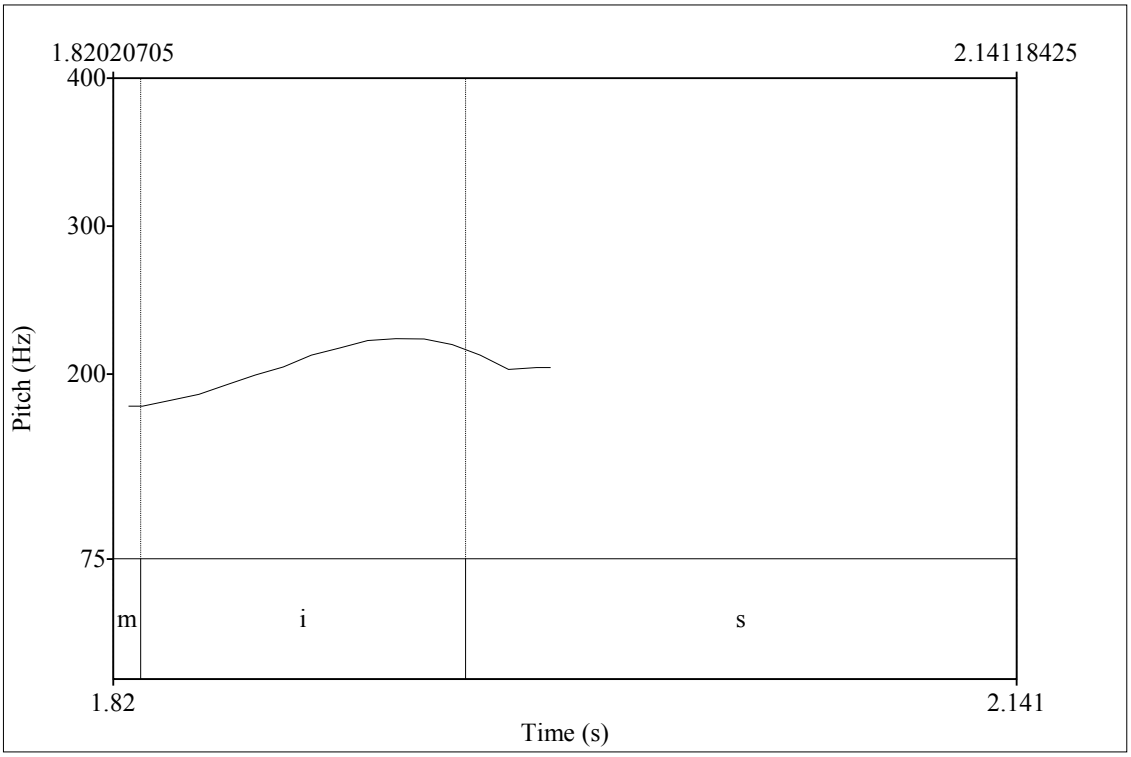

Figure 2.1. Pitch track of *mis* 'cat'

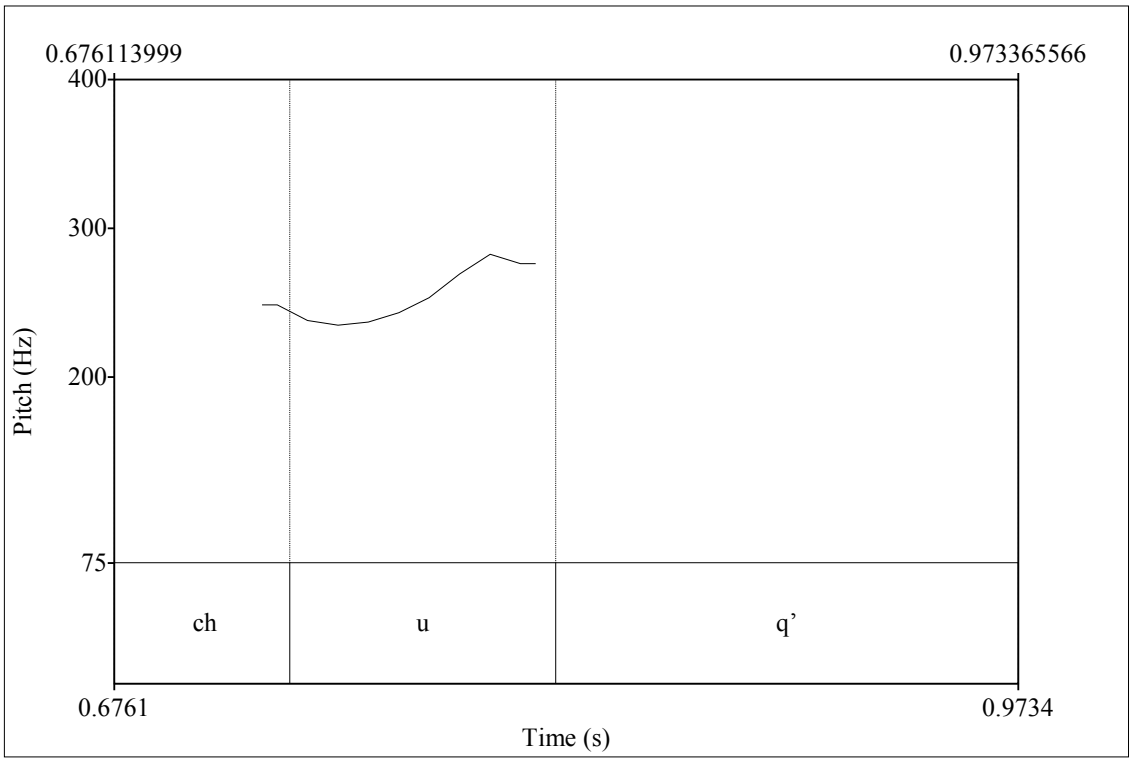

Figure 2.2. Pitch track of *chuq'* 'worm'

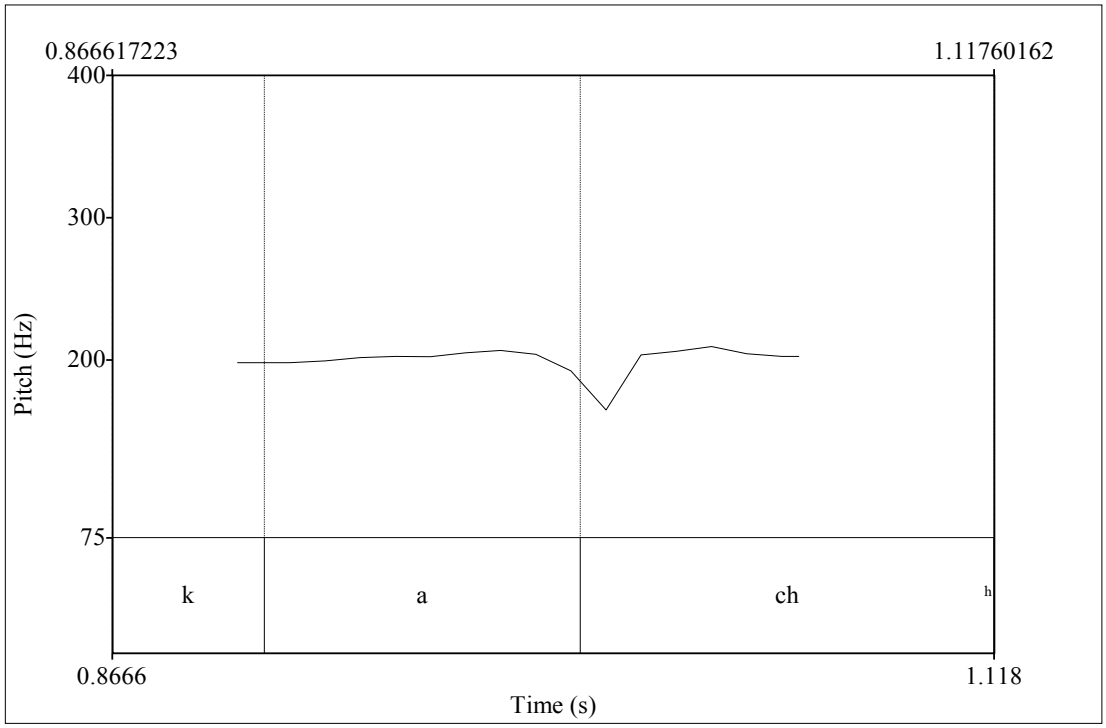

Figure 2.3. Pitch track of *kach* 'fish'

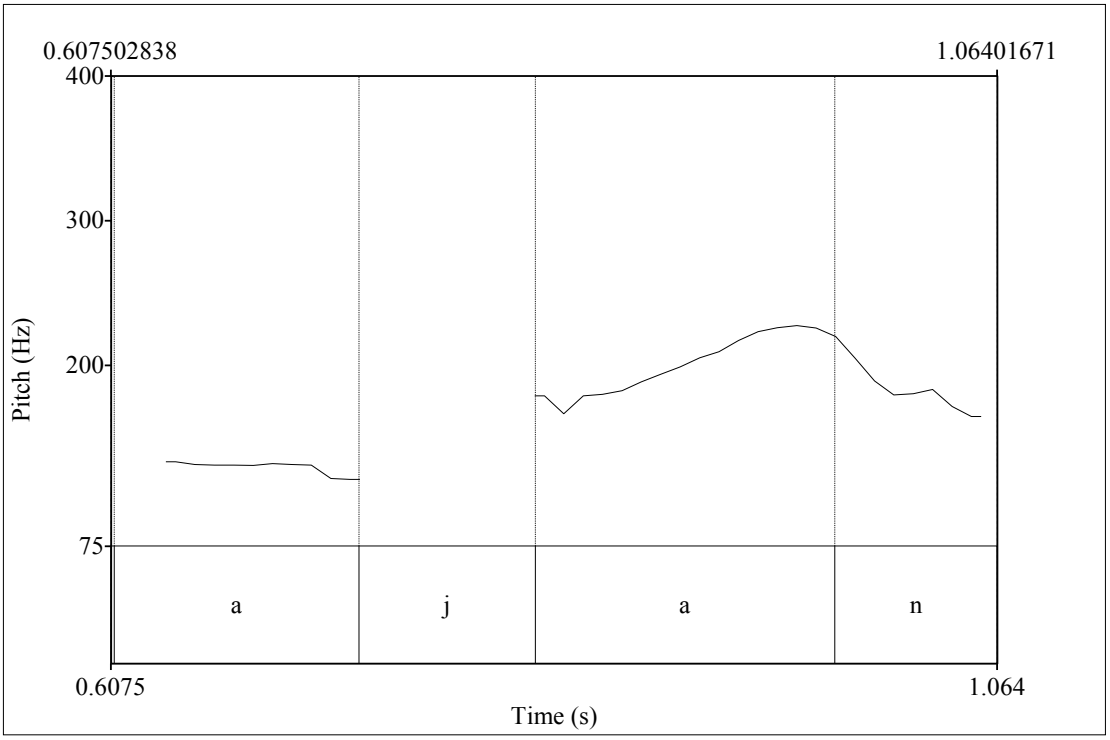

Figure 2.4. Pitch track of *ajan* 'ear of corn'

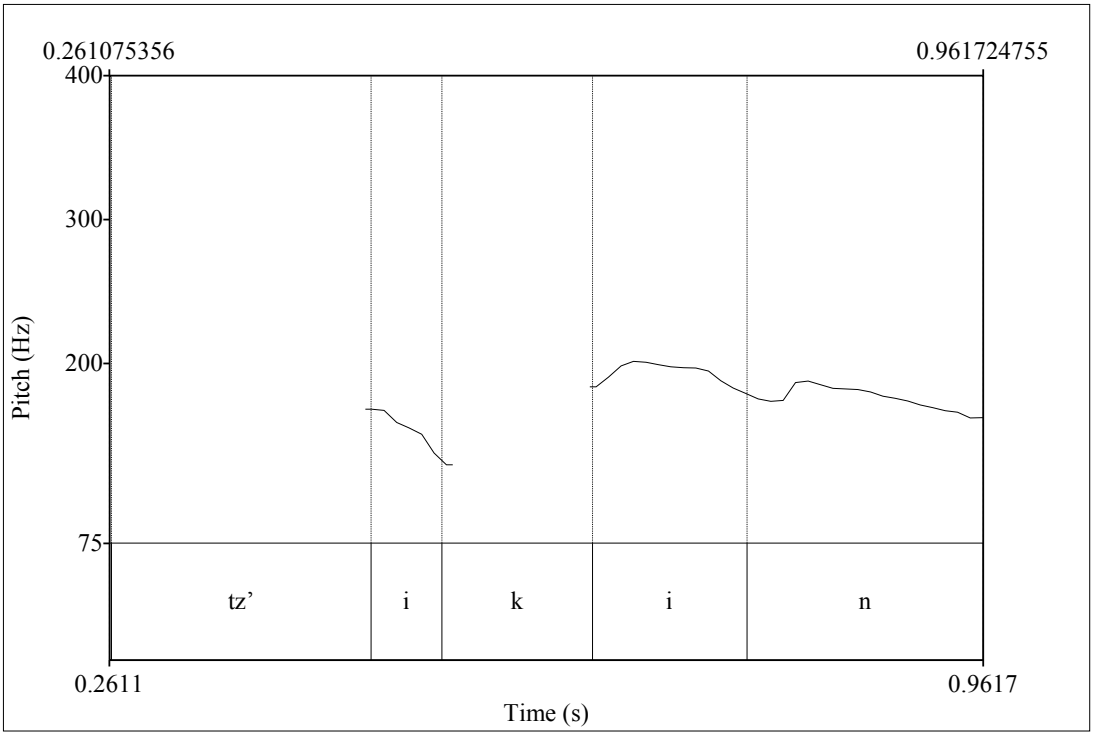

Figure 2.5. Pitch track of *tz'ikin* 'hen'

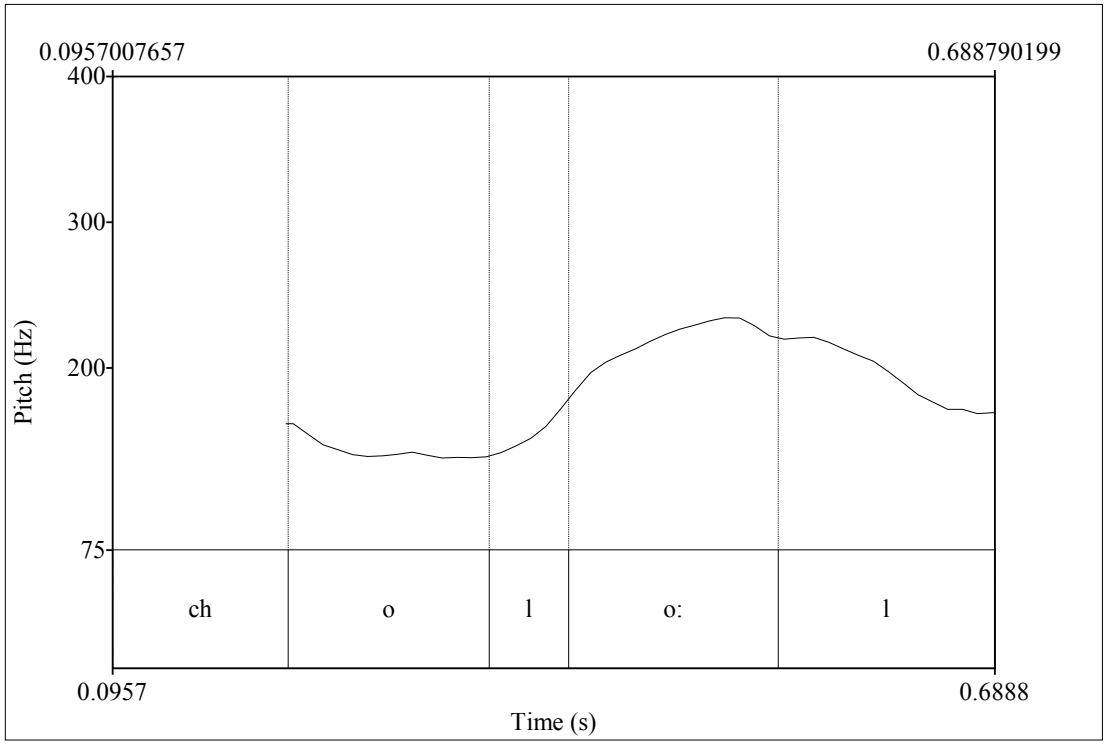

Figure 2.6. Pitch track of *ch'olo:l* 'toad'

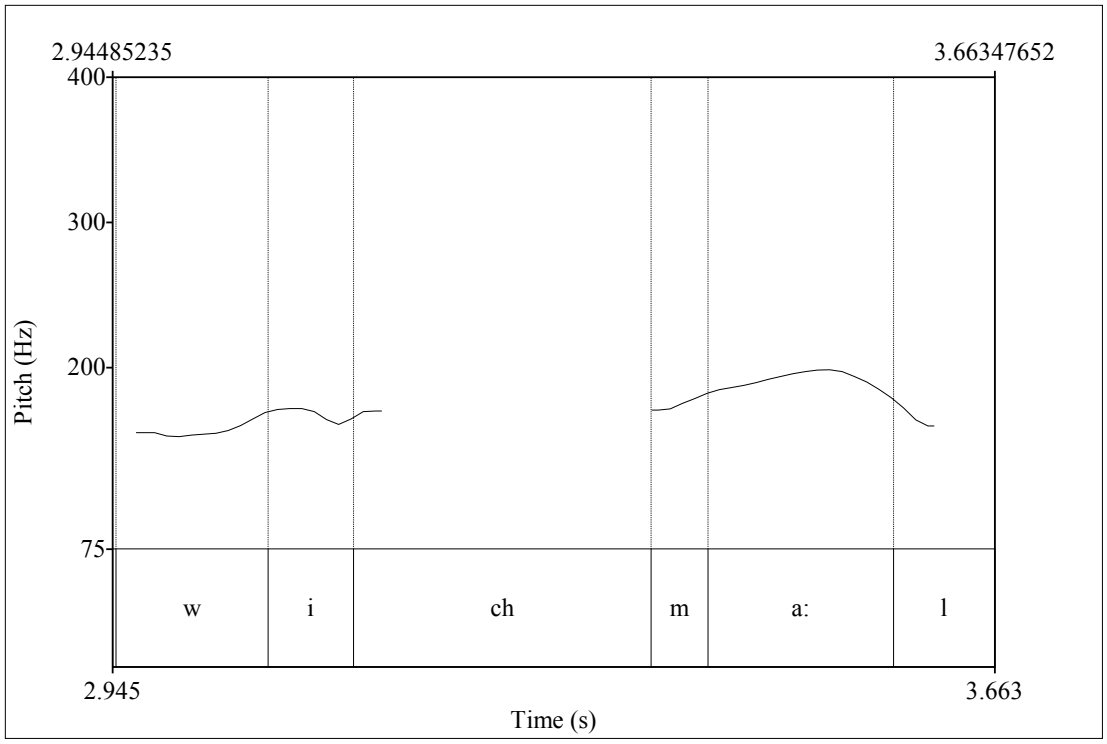

Figure 2.7. Pitch track of *wichma:l* 'my husband'

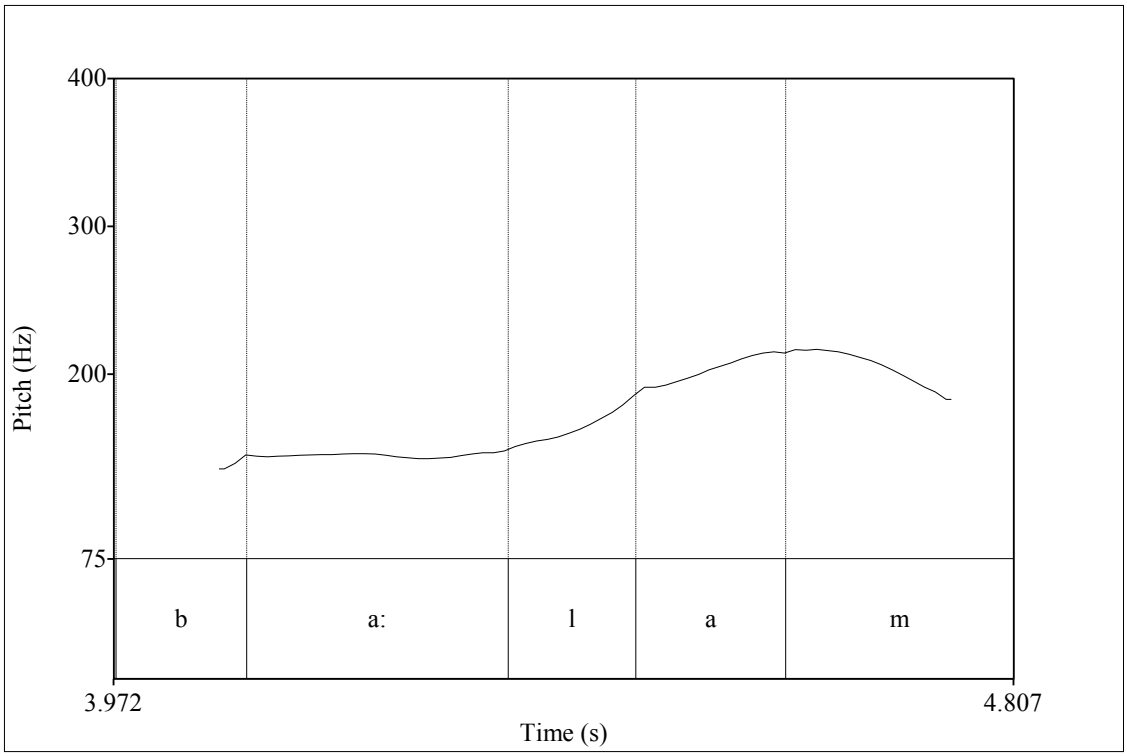

Figure 2.8. Pitch track of *b'a:lam* 'jaguar'

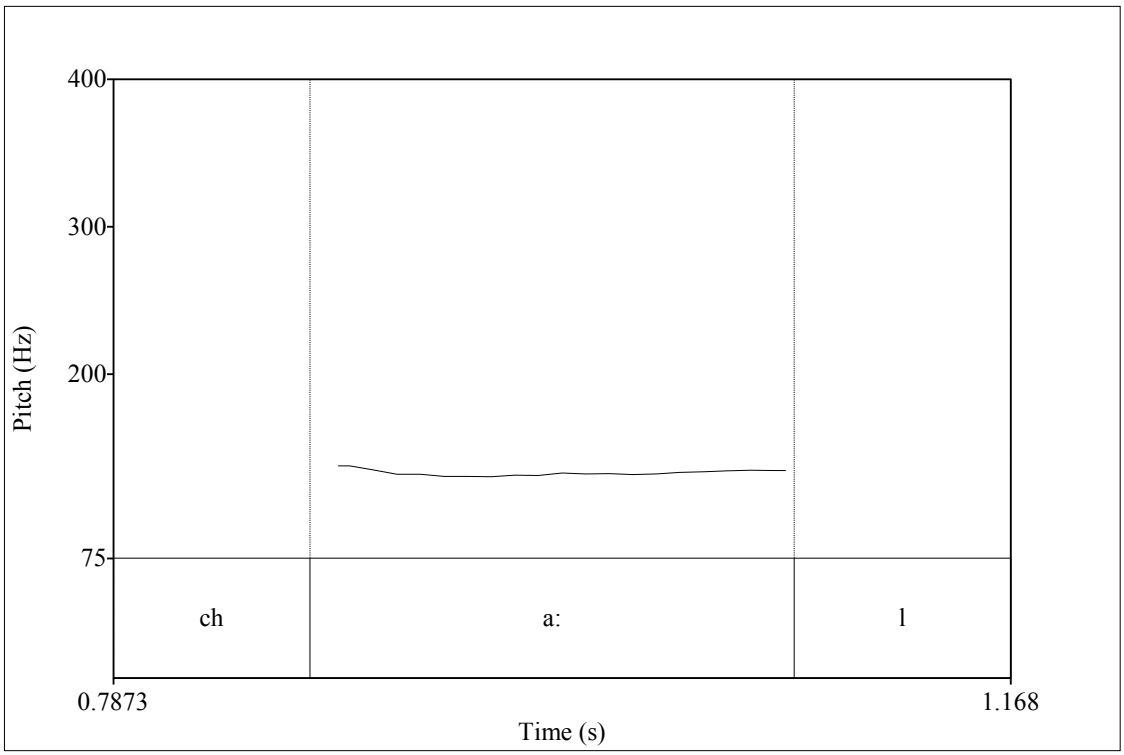

Figure 2.9. Pitch track of *cha:l* 'her child (of woman)'

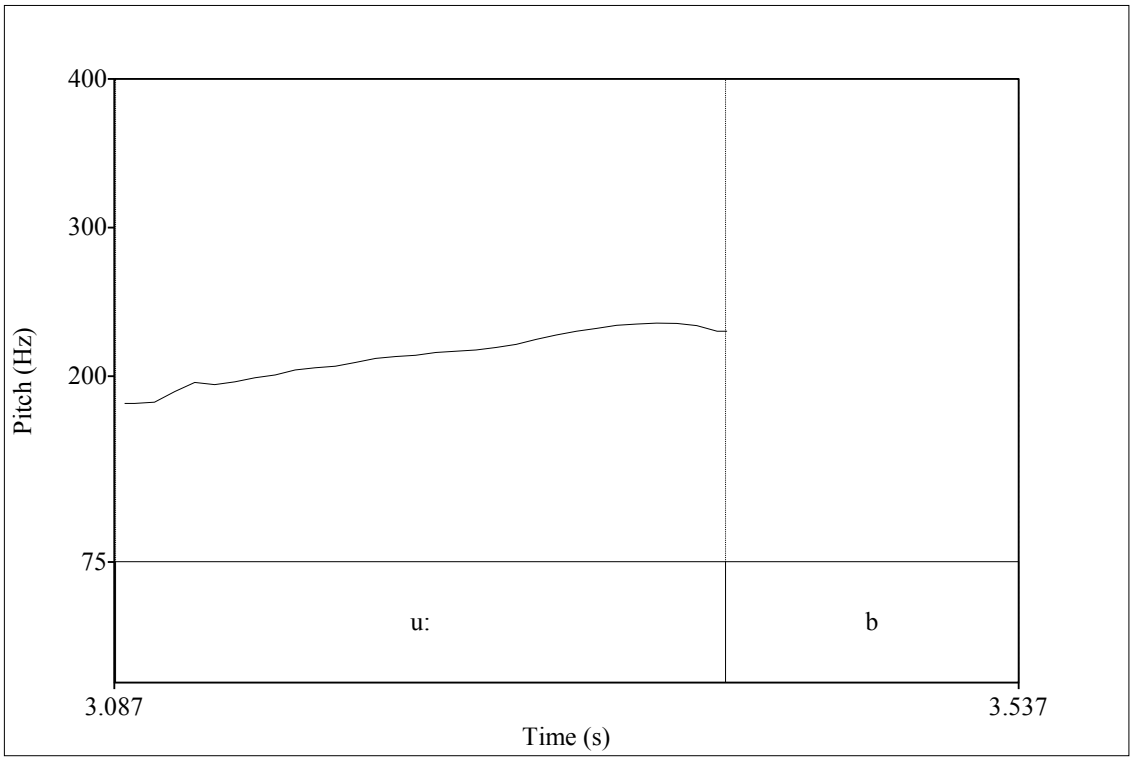

Figure 2.10. Pitch track of *'u:b* 'quail'

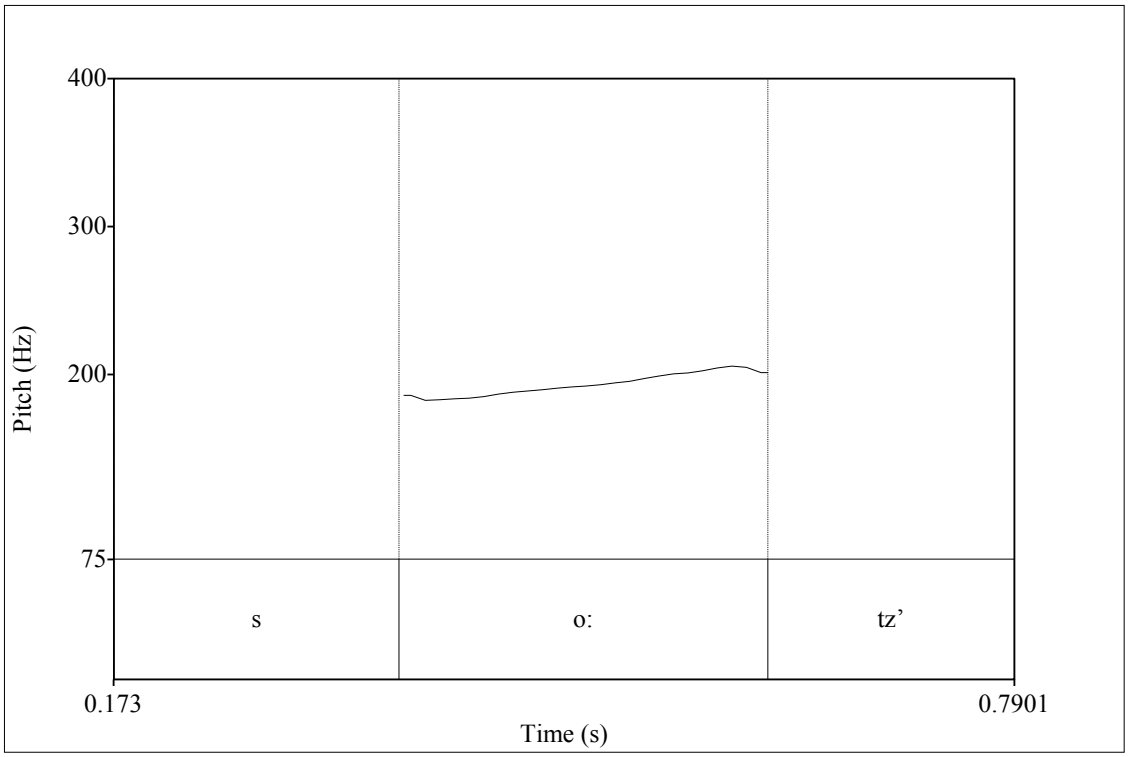

Figure 2.11. Pitch track of *so:tz'* 'bat'

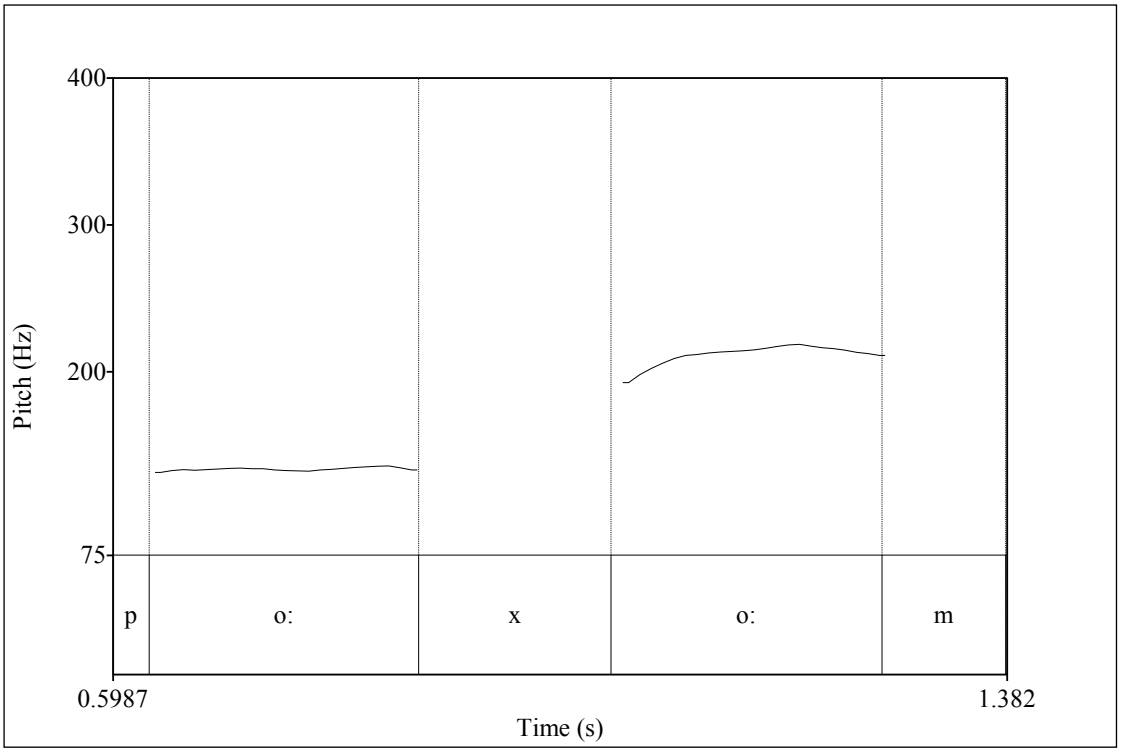

Figure 2.12. Pitch track of *po:xo:m* 'curer'

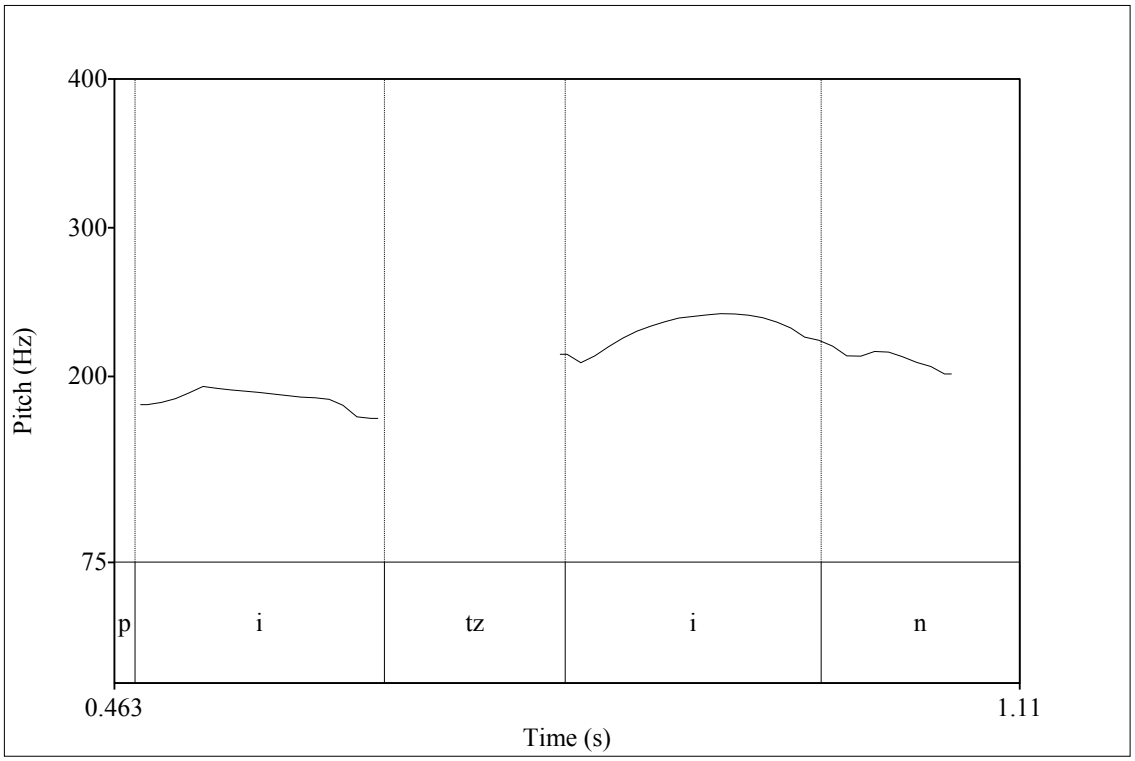

Figure 2.13. Pitch track of *pi:tzin* 'lizard'

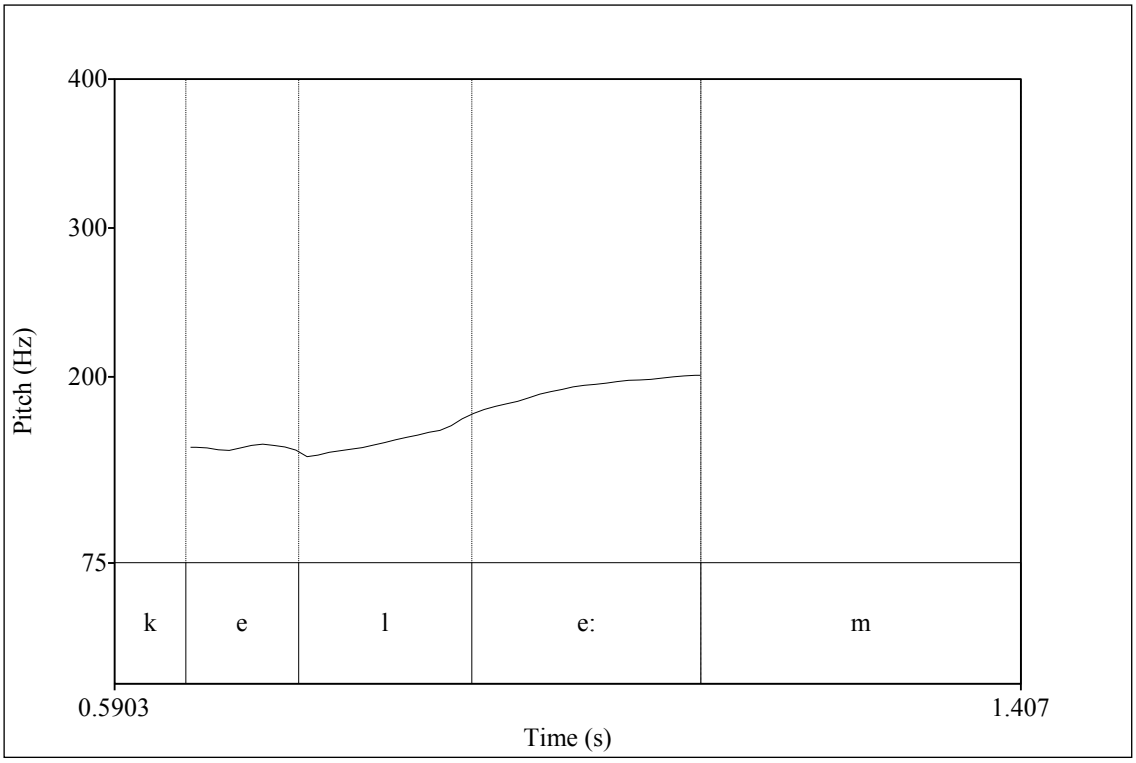

Figure 2.14. Pitch track of *kele:m* 'rooster'

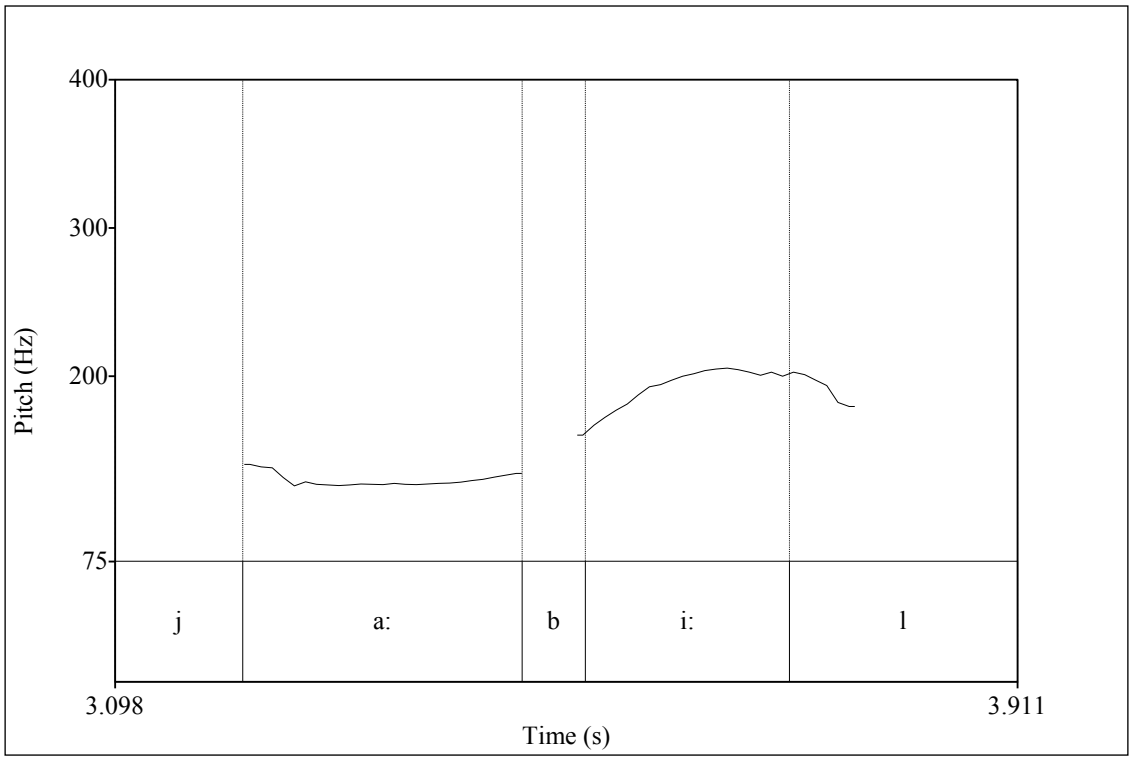

Figure 2.15. Pitch track of *ja:b'i:l* 'year'

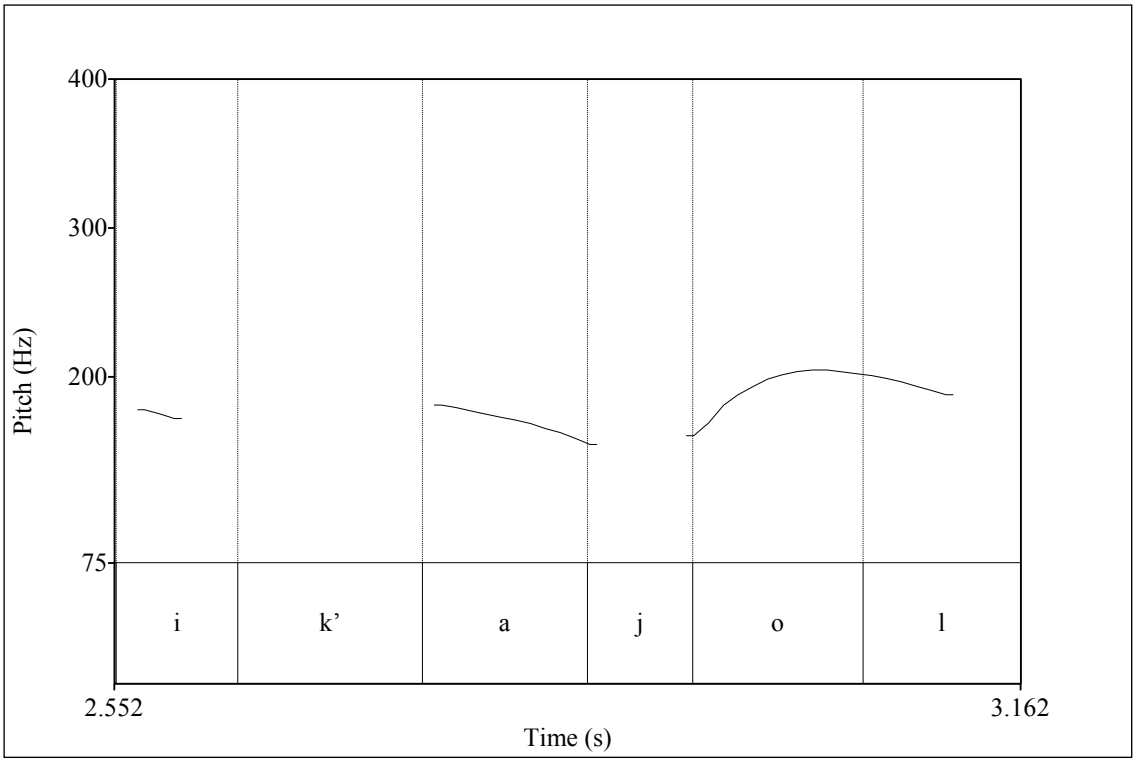

Figure 2.16. Pitch track of *i:k'a:jo(:)l* 'my child (of man)'

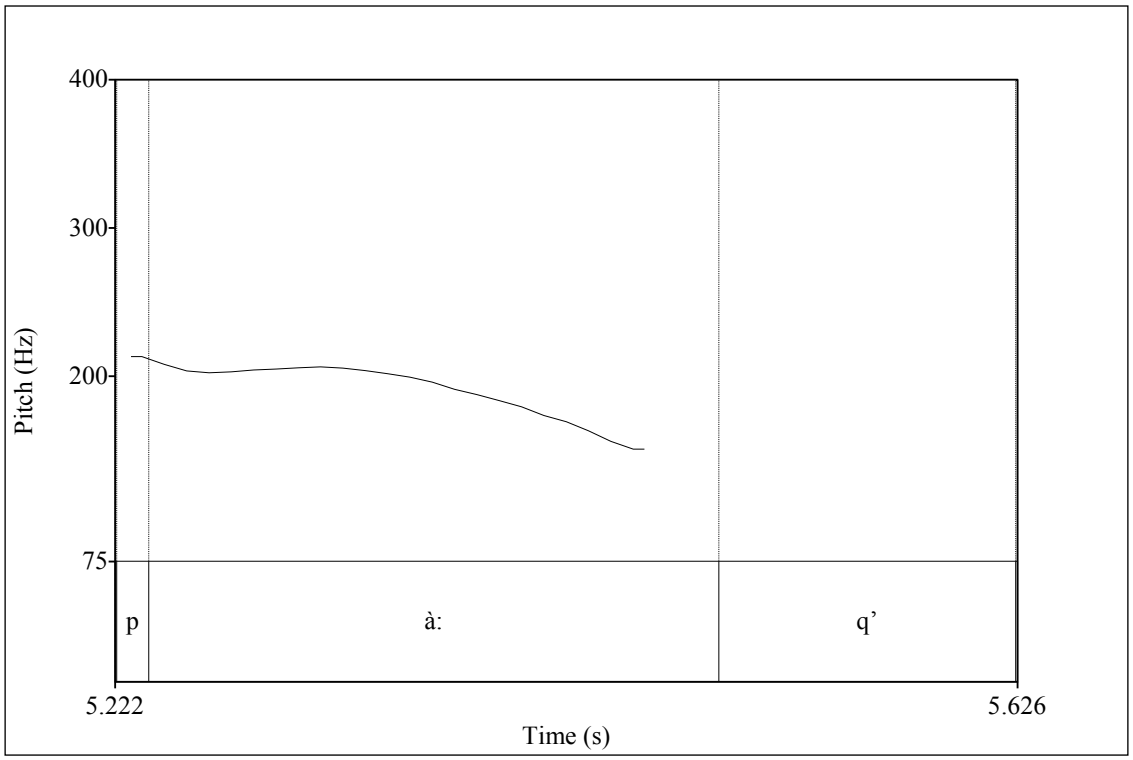

Figure 2.17. Pitch track of *pà:q'* 'green bean'

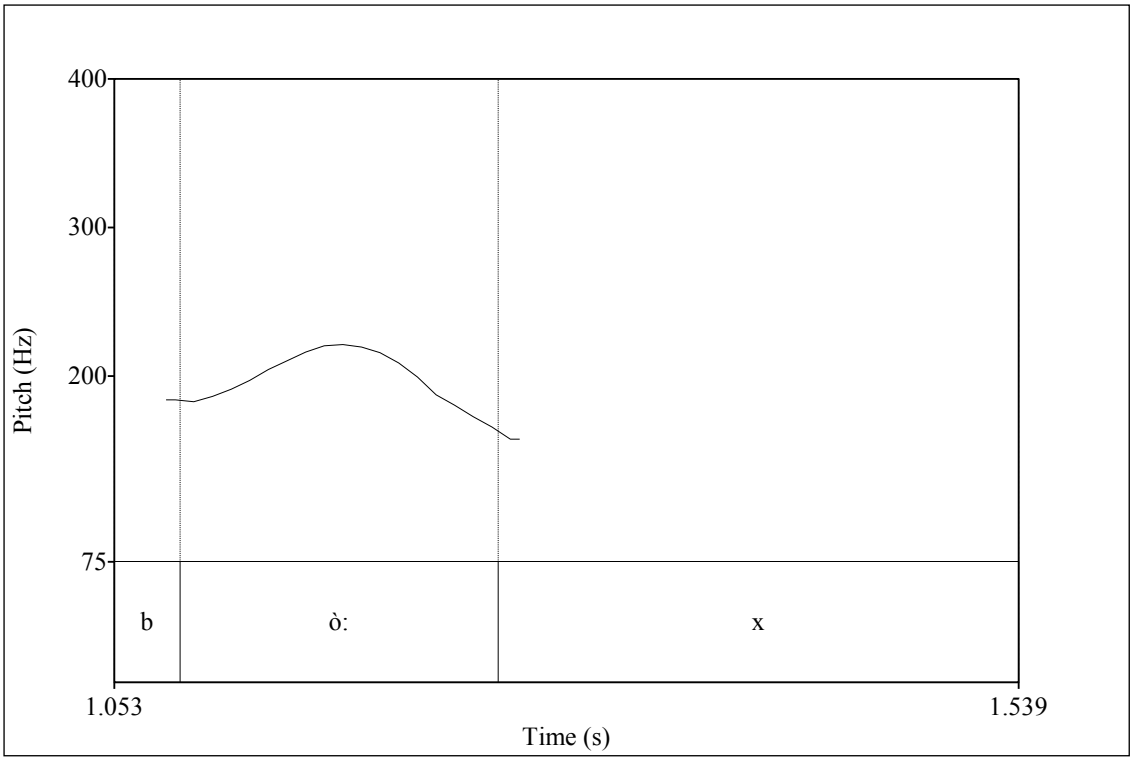

Figure 2.18. Pitch track of *bˈòːx* 'tortilla'

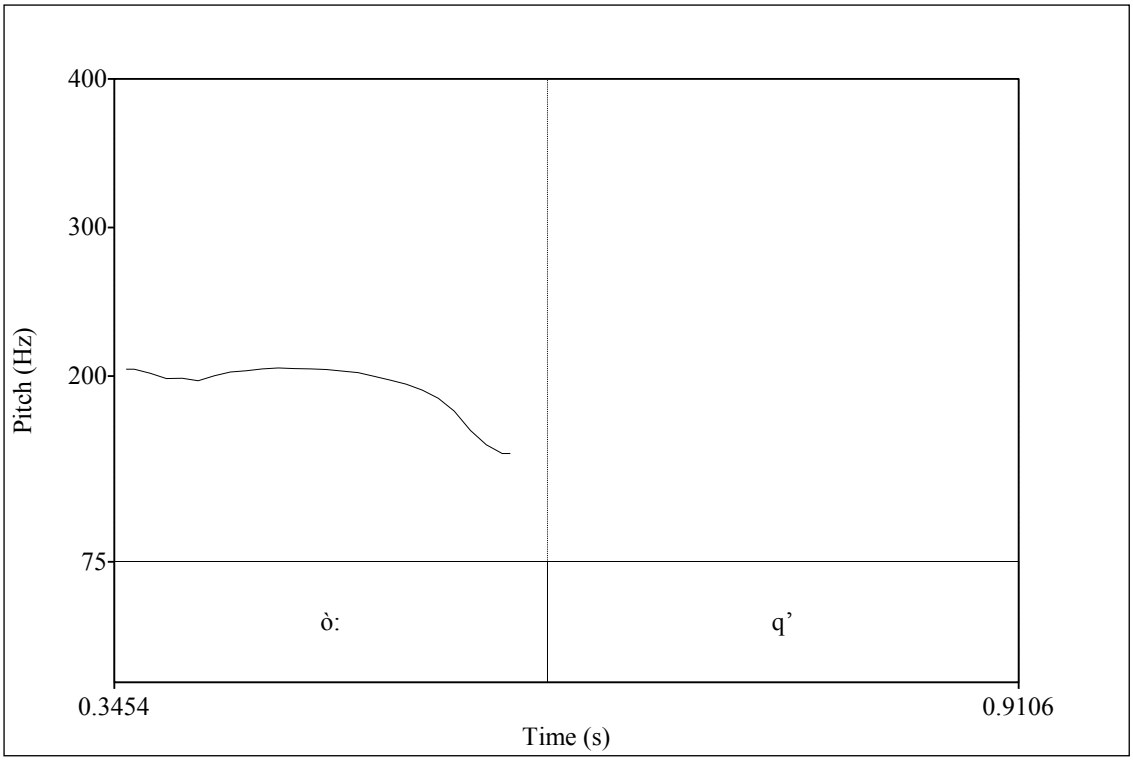

Figure 2.19. Pitch track of *ò:q* 'coyote'

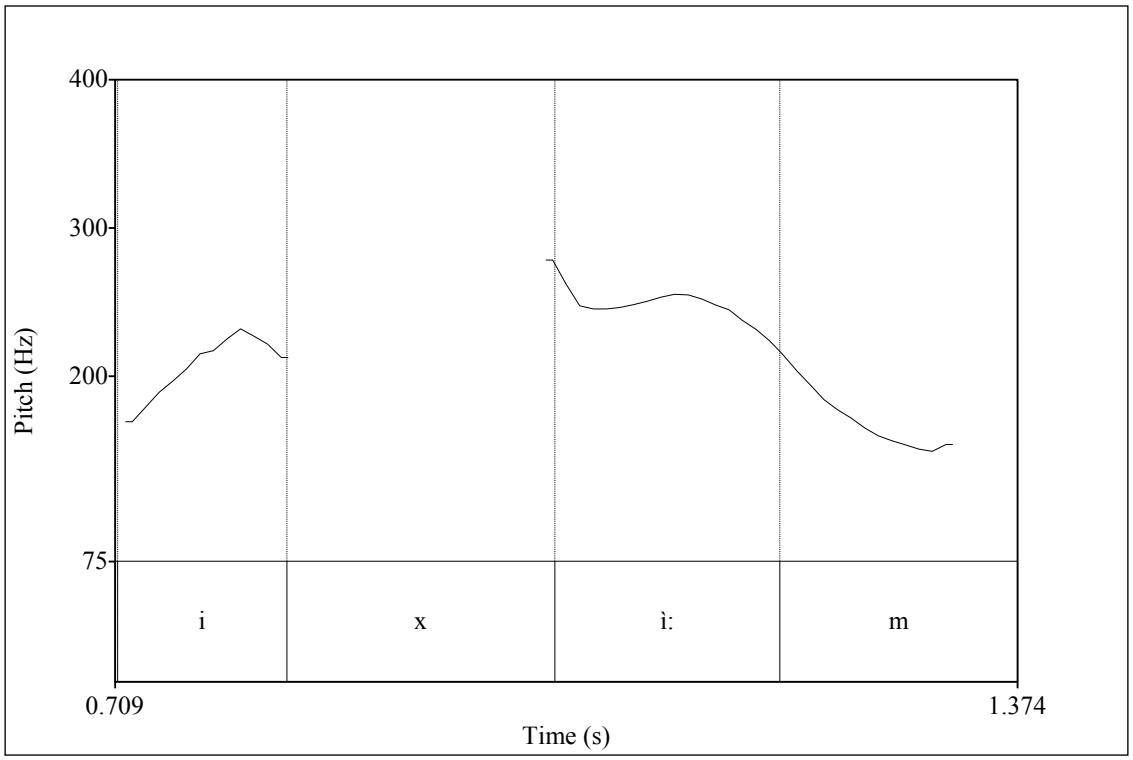

Figure 2.20. Pitch track of *ixì:m* 'corn'

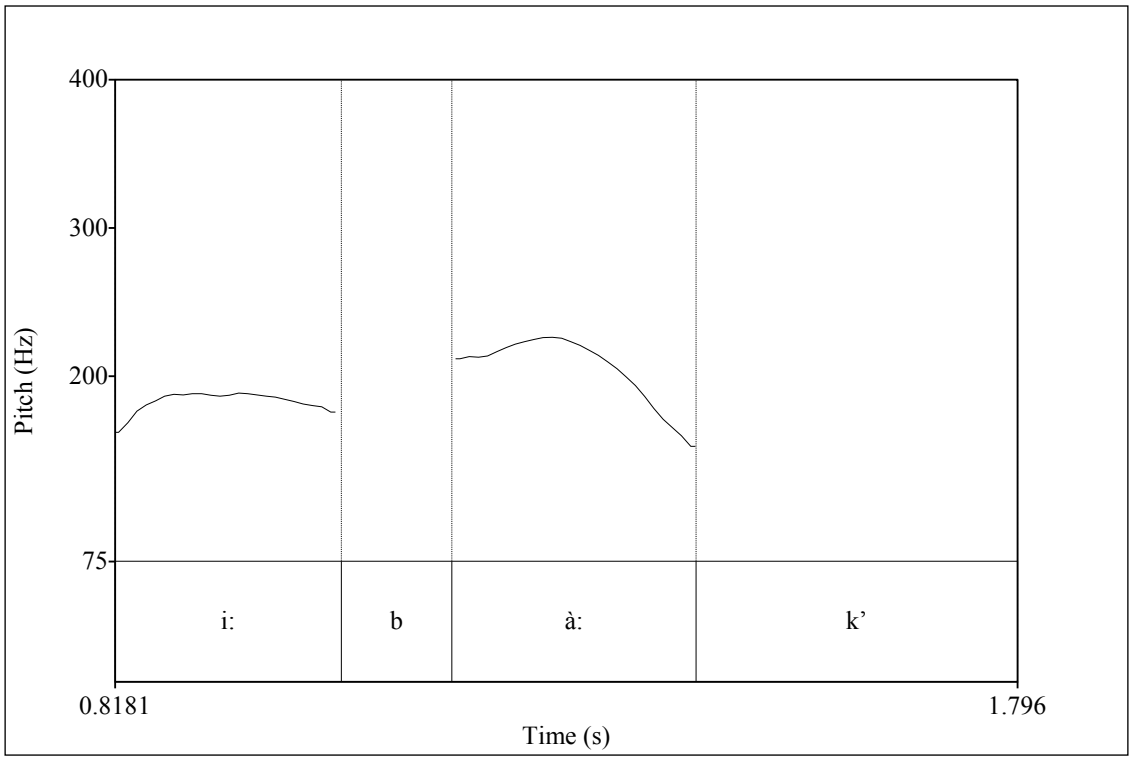

Figure 2.21. Pitch track of *i:bà:k* 'my brother-in-law (of man)'

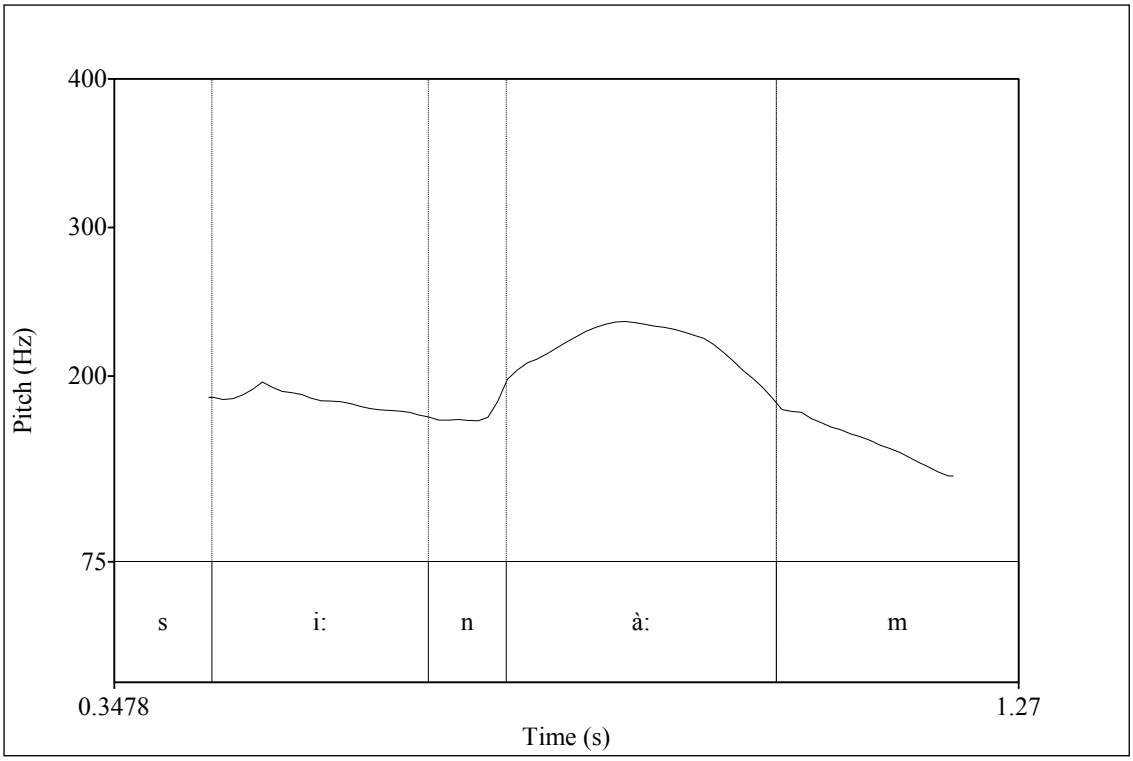

Figure 2.22. Pitch track of *si:nà:m* 'scorpion'

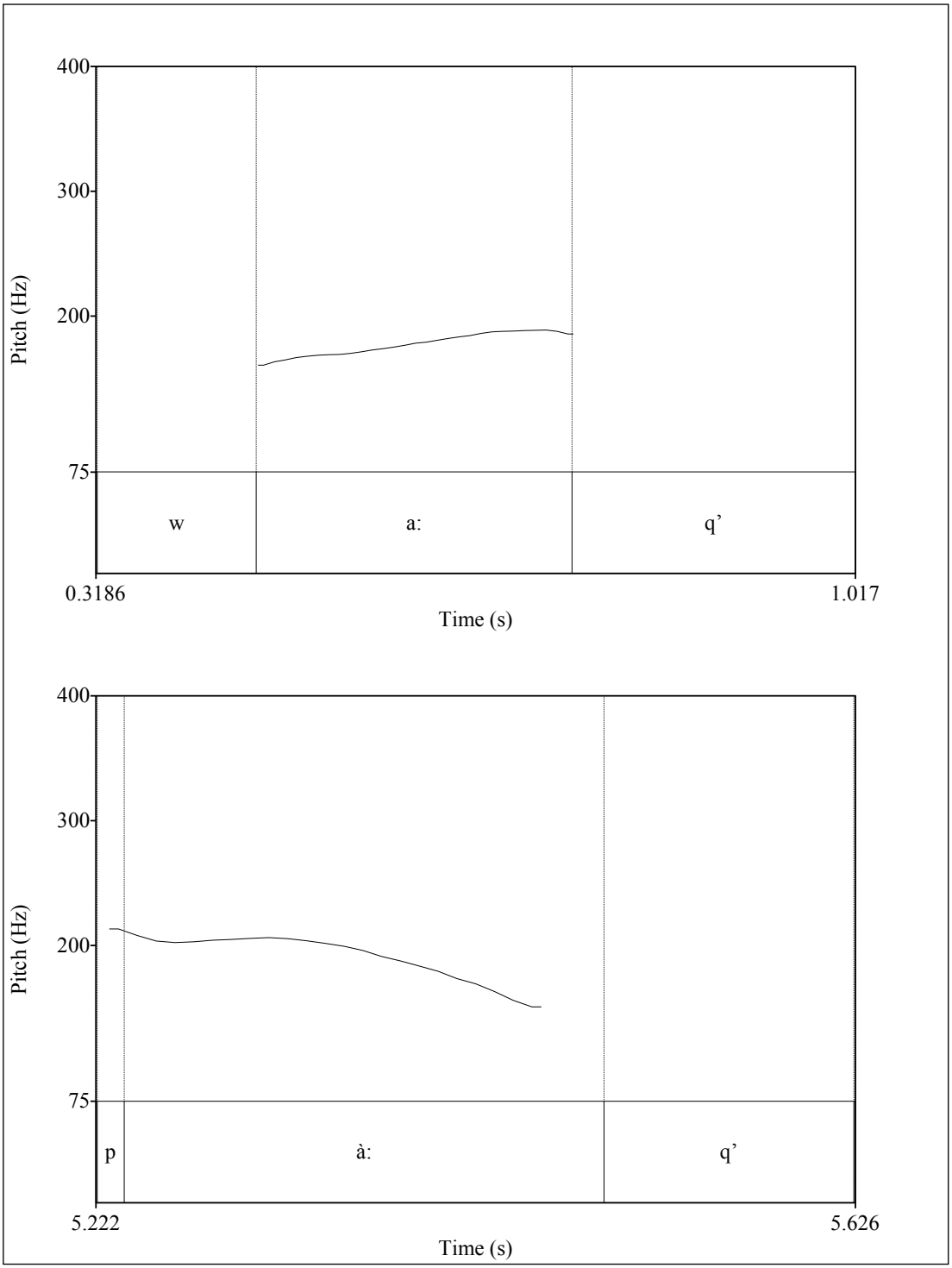

Figure 2.23. Pitch tracks of *wa:q′* 'my tongue' and *pà:q′* 'green bean'

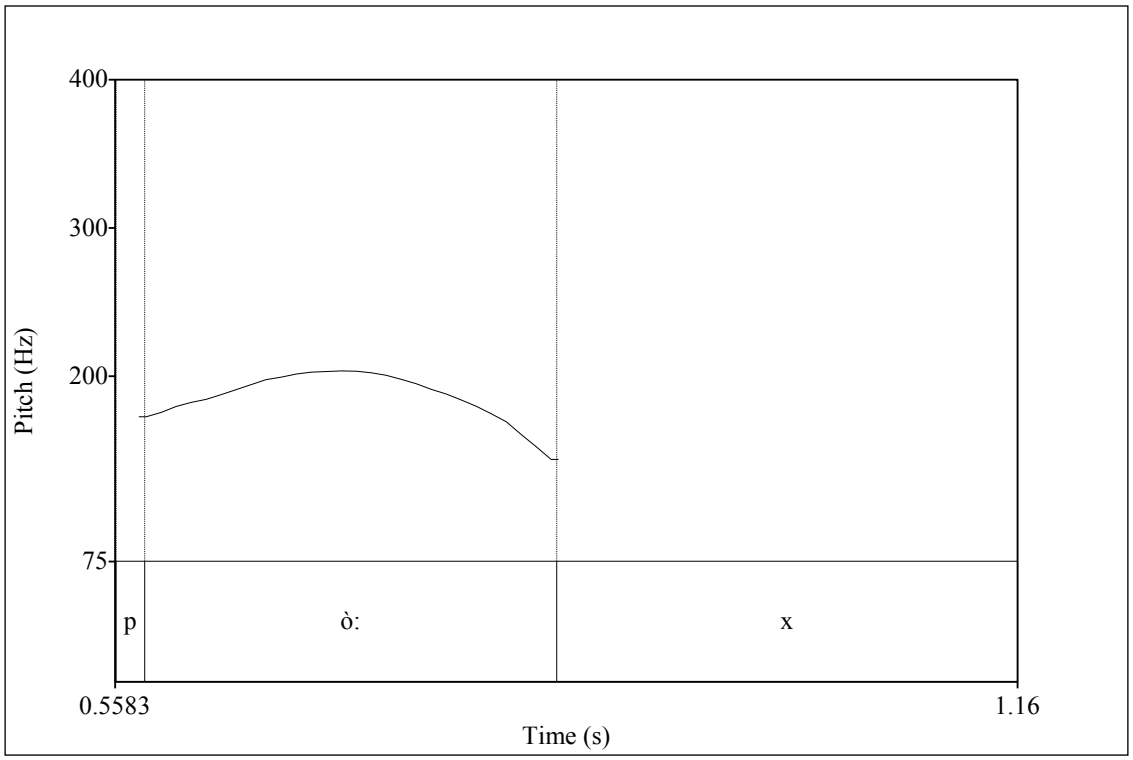

Figure 2.24. Pitch track of *pò:x* 'medicine'

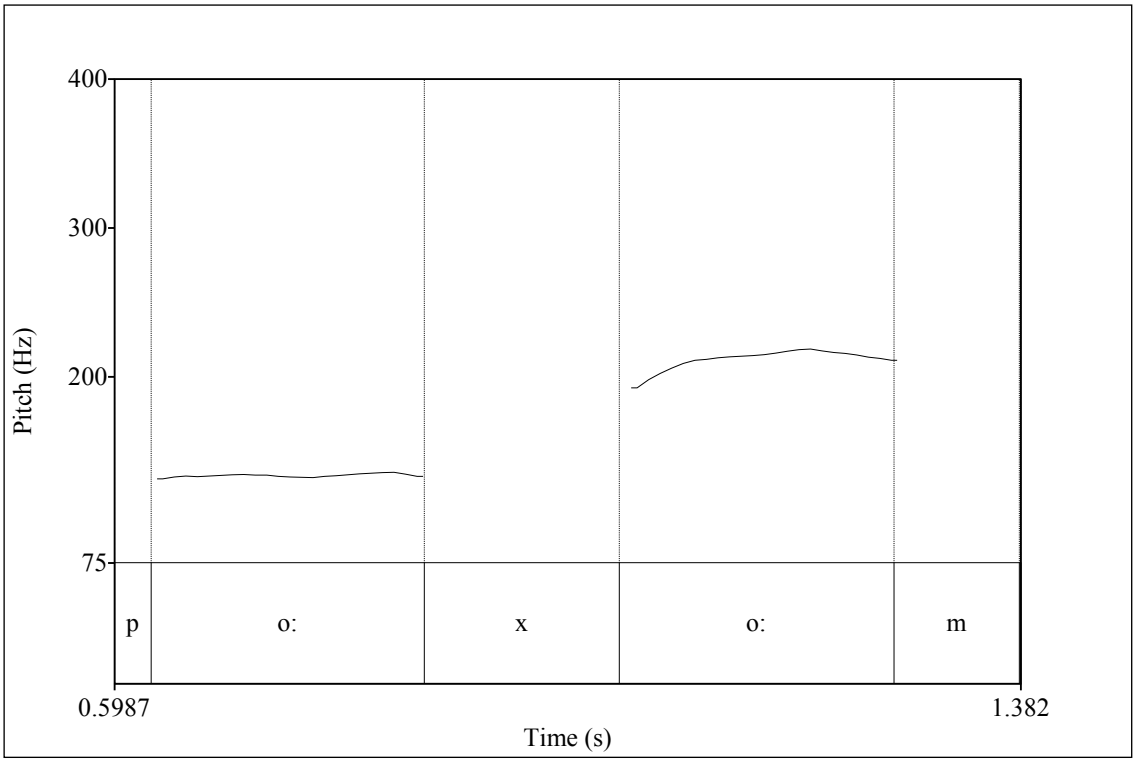

Figure 2.25. Pitch track of *po:xo:m* 'curer'

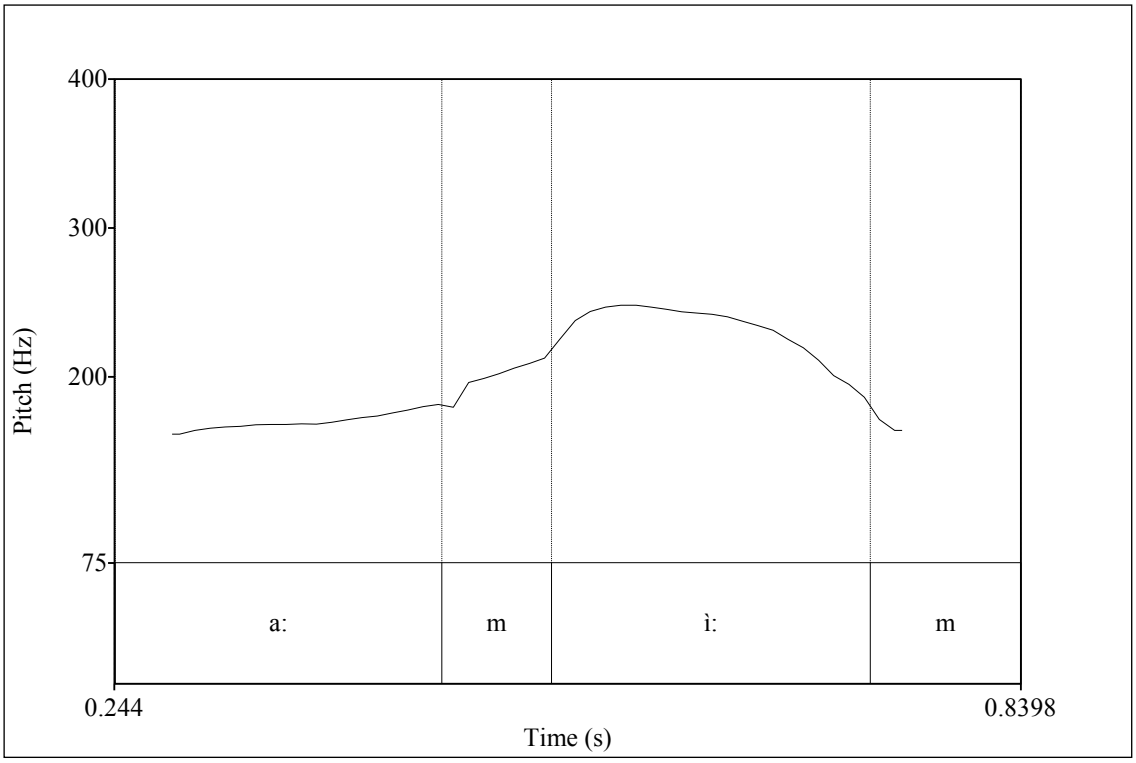

Figure 2.26. Pitch track of *a:mì:m* 'your (sg.) mother'

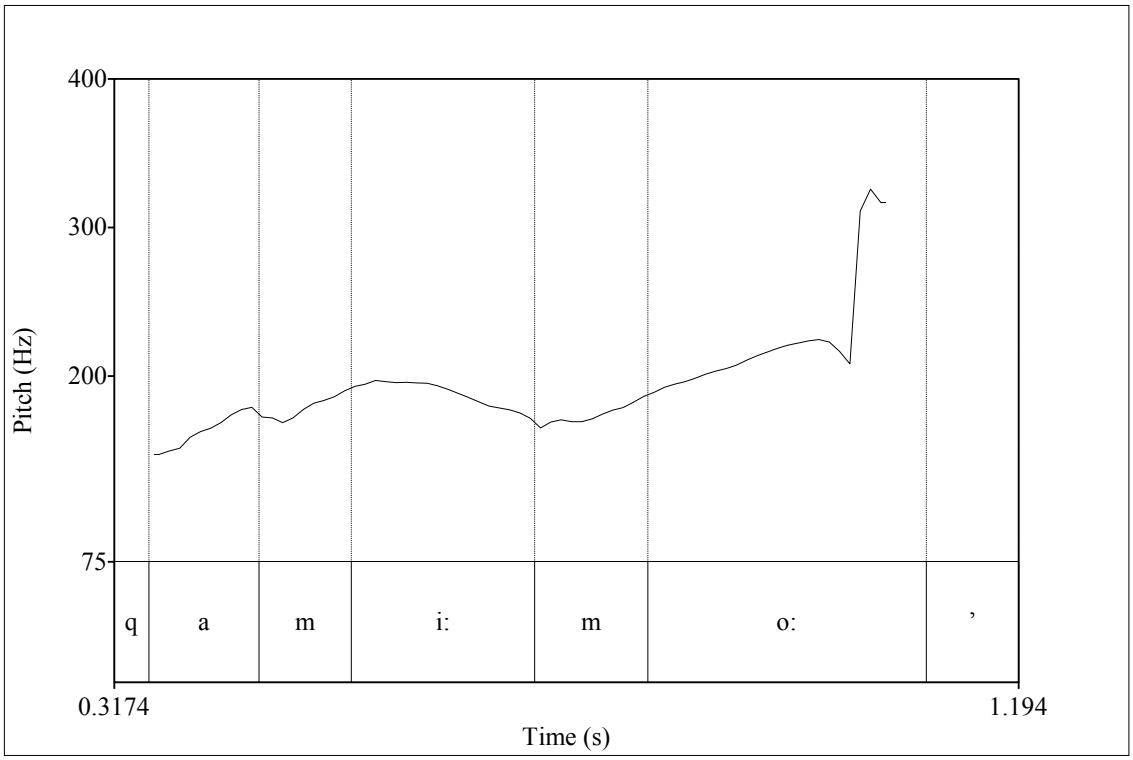

Figure 2.27. Pitch track of *qami:mo:'* 'your (pl.) mother'

CHAPTER 3

MOCHO' TONE IN DIACHRONIC PERSPECTIVE

3.1 Diachronic source of falling tone

Long vowels with falling pitch (described in Section 2.3.2.3) have a phonemic contrast with plain long vowels and short vowels (see Section 2.3.3), but they are limited in distribution to stressed syllables of nouns. Diachronically, these vowels correspond to Proto-Mayan (PM) sequences of a short vowel followed by a glottal stop and another consonant (*VʔC). Kaufman (1967) transcribes these sequences as V' or Vʔ and gives a set of rules for deriving the pronunciation of sequences identified as [Vʔ]. According to Kaufman, a postvocalic glottal stop that precedes a consonant is never actually pronounced as a glottal stop. Following Kaufman (1967), Martin (1984) presents these sequences as [Vʔ] but notes that they are often realized as a long vowel with falling pitch. Campbell notes that the sequences Kaufman transcribed as /Vʔ/ "almost never include a full glottal stop" (1988:236) and are realized instead as long vowels with falling pitch; transcribing them as /V̀:/. There is little reason for treating these vowels synchronically as [Vʔ]. As there is no discernible glottal stop, the articulation is always as a long vowel (as indicated by Kaufman's rules as well as perception evidence). When one of these sequences occurs in a stressed position it is pronounced as a long vowel with falling pitch

or contoured rising then falling pitch; in unstressed positions the pitch is neutralized and it is simply pronounced as a long vowel, indistinguishable from other plain long vowels (see Section 2.3.3).

3.2 Development of copied vowels

Among other possible paths of development of contrastive falling pitch, Martin (1984) raises the possibility that Mocho' went through an intermediate copy vowel stage where the vowel in **V?C* sequences became rearticulated with a copied vowel, developed falling pitch, and then the glottal stop was lost. In proposing the possible innovation of copied vowels, Martin notes that Tuzanteco, a closely related language, has copied vowels precisely where Mocho' has falling tone, as shown in the cognate forms in (412) - (413).

(412) (a) kà:nh (Mocho') (b) kaʔanh (Tuzanteco) 'sky'

(413) (a) ixì:m (Mocho') (b) ixi'im (Tuzanteco) 'corn'

In Mocho', these sequences are pronounced as long vowels with falling pitch while in Tuzanteco they are pronounced as two short vowels with a medial glottal stop (as $V_1ʔV_1C$); both languages have falling pitch throughout these cognate sequences. The explanation offered for the development of contrastive falling pitch in Mocho' long vowels is that Mocho' and Tuzanteco shared the development of the copy vowel (that is, from **V?C* to $V_1ʔV_1C$); both languages then developed falling pitch in these sequences, and finally Mocho' lost the glottal stop and merged the two vowels into a single long vowel. The following sections lay out evidence for this path of development.

3.2.1 Copied vowel sequences in Mocho'

If PM **V?C* sequences developed into $V_1?V_1C$ and then developed into long vowels with falling pitch in Mocho', it would be expected that existing $V_1?V_1C$ sequences would have merged with those innovated from **V?*. Thus, one indication of the status of $V_1?V_1C$ would be the existence of fewer $V_1?V_1C$ forms in Mocho' than expected when compared with other Mayan languages and evidence of a merger. This is indeed the case: the modern $V_1?V_1C$ forms found in Mocho' are primarily limited to those with morphological boundaries (which are marked by [ʔ]) or recently grammaticalized forms.

The lexical data in Kaufman's Mocho' dictionary database (1967) were searched for all $V_1?V_1$ sequences in Mocho' and compared with the Proto-Mayan forms in Kaufman with Justeson (2003). Table 3.1 contains a list of $V_1?V_1C$ forms found in the Mocho' database (Kaufman 1967).

In Table 3.1 the first five words end in *-Vl* (*tza'al*, *ba'al*, *ku'ul*, *nu'ul*, *si'il*) and are likely grammaticalized forms of roots combined with a *-Vl* suffix of some sort. Both harmonic and disharmonic *-Vl* suffixes abound in the modern Mayan languages serving several functions (primarily noun-related), and have also been proposed historically for Proto-Mayan.[8]

The forms *na'a*, *ma'an*, *-u'u:j* are particles; *je'e:l* and *ta'ach* are particle combinations. Particles often undergo processes of syllable loss and vowel reduction (cf. Martin n.d.). Thus, although these forms have the form of $CV_1?V_1C$, they likely evolved due to grammaticalization processes; having an original morphological form of $CV_1?\text{-}V_1C$ that has lexicalized. The individual morphemes are no longer clear, but it is probable that

8 See, for example, Kaufman 2003:25.

they were grammaticalized after the period of tonogenesis. The structure $V_1ʔV_1C$ sequence in *junanh-e'-e* is likely a reduplication of the third person plural suffix *-e*; thus, *junanh-e* 'all of them' (cf. *junanh* 'all'). The last form in the chart, *po'ob'* 'hammock', may also be a grammaticalized form that includes a PM instrumental suffix *-(o)b'* (Lyle Campbell, pc).

Clearly, the *$*V?VC$* nucleus of Proto-Mayan is not found unchanged in present-day Mocho'. If Mocho' did indeed develop copied vowels as part of the tonogenesis process, PM * $V_1ʔV_1C$ and *$*V?C$* appear to have merged in the form of $V_1ʔV_1C$ as an intermediate stage. To confirm this possible merger of PM * $V_1ʔV_1C$ and *$*V?C$* segments, Kaufman's Proto-Mayan Etymological Dictionary (Kaufman with Justeson 2003) was searched for the *$*V_1ʔV_1C$* sequences reconstructed for Proto-Mayan, Proto-Eastern-Mayan (PEM), or Proto-Western-Mayan (PWM) that have a corresponding form indicated for Mocho'. The data are sparse, but all *$*V?V$* protoforms that were identified as having a cognate in Mocho' are transcribed as *$*V?$* (Kaufman's transcription for the present-day long vowels with falling pitch). A list of example forms is given in Table 3.2; the data are from Kaufman 2003 but word forms have been changed to match the transcriptions used in this dissertation.

3.2.2 Synchronic evidence for copied vowel development

Another source of evidence for the development of the falling pitch contrast from copied vowels is found in the production of current $V_1ʔV_1C$ sequences (found in grammaticalized forms or over morphological boundaries). A stressed $V_1ʔV_1C$ syllable has with rising pitch (following stress rules) if pronounced carefully, but in rapid or

conversational speech these sequences often are pronounced with partial or complete falling pitch and an incomplete or absent glottal stop. Figures 3.1 and 3.2 show two instances of the utterance *k'o:yo ma'an* 'who knows?' recorded in the same elicitation session; Figure 3.1 was uttered slowly and carefully and Figure 3.2 was spoken more rapidly.

In Figure 3.1 there is glottal constriction, before that the pitch levels out and after that the pitch rises. Conversely, in Figure 3.2 there is no visible glottal constriction and the pitch has a steady and rapid decrease throughout the final syllable as is found in marked pitch vowels. Clearly, the rate of speech and carefulness in pronunciation affect the pitch track and glottal closure of synchronic $V_1ʔV_1C$ sequences; the careful pronunciation of the word ma'an depicted in Figure 3.2 also has falling pitch that is counter to the unmarked stress patterns of Mocho' (rising stress in final syllables). The synchronic variation in $V_1ʔV_1C$ sequences provides physical evidence for the path of development of contrastive falling pitch sequences in Mocho' and Tuzanteco, and supports the hypothesis that the modern long vowels with falling pitch in Mocho' could have developed from $V_1ʔV_1$ sequences earlier in the history of the language.

(414) k'ooyo ma'an

who DUBITATIVE

'who knows?'

Underlying $V_1ʔV_1$ sequences in other languages have also been identified as having the pronunciation of a long vowel with falling pitch. For example, in the Gosiute dialect of Shoshone (a Uto-Aztecan language of North America), $V_1ʔV_1$ sequences are

often realized phonetically as falling pitch, which may be forming an incipient pitch contrast (Dirk Elzinga, pc).

3.2.3 Copied vowels and Proto-Mayan /h/

Further support for the development of copied vowels in Mocho' from PM **VʔC* segments is the evidence that copied vowels have been innovated in Mocho' following the other PM laryngeal consonant [h] in PM **VhC* sequences. Table 3.3 compares all PM *[VhC] words from Kaufman with Justeson 2003 with lexical items from Kaufman's Mocho' database.

It can be seen in Table 3.3 that the development of copied vowels following [h] is a shared development for both Mocho' and Tuzanteco. It should be noted that the Proto-Mayan forms had both *j and *h, which have merged to *j in Mocho'; copied vowels occur with both (the words that are not included for Tuzanteco have not been documented and it is unknown whether they exist). It is clear that the words with PM **VhC* segments have a shared V_1hV_1C structure in Mocho' and Tuzanteco (where *h is <j>[x] in Mocho'; if indeed the reconstructed protoforms prove to be correct, then the development of copied vowels in the manner described above is highly probable.

3.2.4 Comparison of Tuzanteco developments

Tuzanteco is a variety closely related to Mocho'; in fact, so little is known about Tuzanteco that it is not clear whether it is a dialect of Mocho' or a separate language. It is

spoken in Tuzantán, Chiapas, Mexico.[9] Tuzanteco is moribund, with fewer than five remaining speakers who are all over 80 years of age. The data included in this section were collected with Tuzanteco speakers in December 2008 on pilot field research: the Tuzanteco data are preliminary, and much more investigation needs to take place to confirm any hypotheses. Prior to recent fieldwork, the only reported information available on Tuzanteco was an 11-page article by Schumann published in 1969 and an unpublished dictionary database (ca. 3000 lexemes) compiled by Kaufman in 1968 along with some audio recordings and transcribed texts.

The separation of the two varieties has taken place rather recently: according to Kaufman the separation was likely in the Late Post-Classic period and perhaps even after European contact (1976:111; pc). According to community lore the separation was caused by a plague of bats that attacked community members while they were living in the region of Belisario Dominguez, causing them to split up and migrate to their current locations. The Mocho' place the separation around 1660 while the Tuzantecos place their separation before 1580, as they claim they were residing in Tuzantán before the construction of the church, reportedly in 1580.

The details of Tuzanteco V_1ʔV_1C sequences that correlate with Mocho' falling pitch long vowels were given in Section 3.2.2, and it was posited that Tuzanteco and Mocho' shared the development of copied vowels and falling pitch in PM *VʔC sequences. The sequences in Tuzanteco that are cognate to Mocho' falling tone have falling pitch as well as a vowel-medial glottal stop, as shown by the pitch track of *ixi'im*

9 There have been reports of a few speakers in Tolimán, but none of these are recent. My Tuzanteco consultants do not know of any speakers of Tuzanteco outside of Tuzantán, and my Mocho' consultants indicate that there are a few speakers of native languages in Tolimán, some known to be speakers of Mocho' as well as a few Mam.

'corn', which is given in example (415) and shown with accompanying pitch track in Figure 3.3, which has falling pitch.

(415) ixi'im 'corn' (Tuzanteco, cf. Mocho' *ixì:m*)

However, there are also newly innovated $V_1ʔV_1C$ sequences in Tuzanteco that have plain long vowels as their source. The pitch patterns of these newly innovated $V_1ʔV_1C$ sequences differ from those that come from PM *VʔC syllables such as the example shown in (415) . These differences reflect a change in progress, but mirror the development of the copied vowels from PM *VʔC in Proto-Mocho'-Tuzanteco. In Tuzanteco, the rising pitch of unmarked stressed vowel sequences are preserved and there are varying amounts of glottal closure, from slight constriction to highly creaky; however, even sequences with a large amount of creakiness have rising pitch throughout the syllable rather than the falling pitch found in $V_1ʔV_1C$ sequences that descend from PM *VʔC.

Example (416) shows a Tuzanteco word *si:'* 'firewood' that has an innovated $Vʔ$*V* sequence with rising pitch; this sequence is the reflex of a PM long vowel followed by glottal stop but with no following consonant. Figure 3.4 shows two articulations produced within a few seconds of each other. The first was made with rapid pronunciation and the second instance was repeated with slow and careful pronunciation; the line in the image shows the pitch of the lexical items.

(416) insi:' 'my firewood' [insi'] ~ [insi'i']

The pitch track of the second, more careful pronunciation clearly shows a break in the pitch track of the stressed vowel [i(:)] (a long vowel in PM and an unmarked long vowel in Mocho'); the sequence in question is found in many instances as [iʔi] in

Tuzanteco, an innovation of a copied vowel. This analogical copied vowel innovation for PM plain long vowels may be extending to vowels in all stressed syllables in Tuzanteco, whether historically long or short. The pronunciation of these sequences is variable, possibly reflecting a change in progress. At least one Tuzanteco speaker is innovating copy vowel sequences in stressed syllables containing PM short vowels. Example (417) is an example of innovative copy vowel forms for the PM short vowels in both *inhubu* 'I set' and *wisq'aq'* 'my fire' that were noted during transcription; more systematic research needs to be done on this topic to confirm this possible development.

(417) kijaki inhub'u' wisq'aq' [kiha:kiʔ i:ŋuɓuʔŭ wisq'aʔaq']

POT.1SG.come 1SG.set 1SG.fire

'I am coming to set up my fire'

The expansion of environments for copy vowel development is possibly due to analogy, with speakers associating preconsonantal stressed long vowels (which have no underlying or diachronic [ʔ]) with the earlier innovated $V_1ʔV_1C$ sequences. If left uninterrupted, the development of glottal stop and rearticulated vowel for plain long vowels in Tuzanteco along with the preservation of the pitch patterns in both types of sequences may have led to a tonal contrast in Tuzanteco that mirrors that of Mocho' with the difference of the retention of glottal stop in Tuzanteco sequences. Sadly, the state of the language means we will never know the next stage of the development as there is not likely to be a new generation of fluent speakers with uninterrupted intergenerational transmission.

3.2.4.1 Reasons for divergence

There are many possible reasons for divergence between Mocho' and Tuzanteco, including external factors such as physical distance and contact with other languages. Since their separation, Mocho' has been in rather intense contact with Mam and Teco and Mocho' speakers have a history of intermarriage with these other groups. Tuzanteco speakers' contact with Mam is more recent, but they have had intense contact and intermarriage with Spanish speakers.

The role of social identity remains a potential factor in the divergence of falling tone-*V?V* sequences in Mocho'and Tuzanteco that needs more investigation. Social factors may have played a role in the recent developments of glottal stop and copied vowels in Tuzanteco long vowels in particular. For example, in interviews with Mocho' and Tuzanteco speakers, I have found their attitudes toward language affiliation to be quite different. While the Mocho' speakers regard Tuzanteco as a dialect of Mocho', the Tuzanteco speakers are anxious to distinguish Tuzanteco as a separate language. When asked what the differences between the languages are, speakers of both groups identify the falling tone-*V?V* divergence. Mocho' speakers identify falling pitch ("el tonido") as an important feature of their language, and when asked about Tuzanteco, give examples (often invented or nonexistent words) that include vowels separated by glottal stops. Tuzanteco speakers say that Mocho' words sound different and give examples of Tuzanteco lexical items that include *V?V* sequences, although they usually do not know the Mocho' corresponding forms. Speakers of both varieties clearly recognize vowel-medial glottal stops in Tuzanteco as an important feature of the language. Perhaps

Tuzanteco speakers identify *V?V* sequences as the feature that sets their language apart as unique, and are extending this feature to other environments.

3.3 Overview of tone in Mayan languages

In addition to Mocho', tone systems have been described in three other Mayan languages. The environments for development of tone have some similarities but each language has a slightly different development. The languages that have tonal contrasts are Uspanteko (~Uspantec, Guatemala), Yucatec (Mexico), and the San Bartolo dialect of Tzotzil (Mexico), Mocho' (~Motozintlec, Mexico). These four languages are found in different branches of the Mayan family (see Figure 1.2) that have little or no history of contact, as they do not share a geographic region. Figure 3.5 shows a map of the Mayan region with tone languages identified.

3.3.1 Description of tone in Mayan languages

Phonemic tone has developed similarly in all Mayan languages; from laryngeals following the vowel in particular positions. For the purposes of comparison, Mocho' falling tone will be considered low tone, as the phonetic description seems comparable to Uspanteko “low” falling tone.

Yucatec Maya is spoken in the Yucatán peninsula and Belize by about 700,000 (Gordon 2005). In Yucatec, a high tone developed from PM **VhC* sequences and an copy vowel as well as high tone on the first vowel from PM **V?C* sequences, yielding Yucatec $\acute{V}_1$?V_1C (Campbell 1977:89). Yucatec high tone is variably described as high rising or high falling; however, Kügler and Skopeteas (2006) describe the high tone as

high level or slightly rising and attribute the reports of falling pitch to intonational patterns in the language.

Uspanteko is spoken in the municipality of Uspantán in the Quiché Department of Guatemala by about 1200 persons (Méndez 2006). Uspanteko tonogenesis is in some ways the reverse of Yucatec; namely, a low tone is present in syllables that were PM **VhC*, **V?C*, and **V?VC* (Campbell 1977:38,89; Kaufman 1976b:19). Uspanteko also developed low tone from word-final PM **V?* sequences and in PM **Vŋ*. As in Mocho', these developments in Uspanteko were constrained to the word-final syllable, and although marked tone is termed "low", it is in actuality falling pitch (Kaufman 1976b:18).

Tzotzil is spoken in the highlands of Chiapas, Mexico and speakers of all dialects were estimated at 265,000 in the 1990 census (Gordon 2005). The San Bartolo (hence SB) dialect has developed a low tone in PM **VhC*. (Kaufman 1972). No description was found of the role of stress or word position on the development of tone in SB Tzotzil.

3.3.2 Comparison of tone in Mayan languages

The tonal developments of the Mayan languages that were described in 3.3.1 are compared in Table 3.4. While Yucatec, Uspantec, and SB Tzotzil all developed marked tone from PM *VhC, Uspanteko and SB Tzotzil developed a low tone and Yucatec developed a high tone. Mocho' is the only language not to develop tone from PM **h*. Uspanteko is the only language to develop tone from PM **Vŋ* and **V?#*.

The Mocho' process of tonogenesis has some unique developments among the Mayan languages. For example, Mocho' is the only language that did not develop tone

from PM *h, instead, developing copied vowels with *h. Mocho' also shares some common developments with the other Mayan languages. Both Mocho' and Uspanteko have merged PM *VʔC and *V_1ʔV_1C into marked tonal sequences with low tone. Both Mocho' and Yucatec have developed long vowels in marked tone sequences in that the laryngeal consonant was lost although the source of marked tone was PM *h in Yucatec and PM *$ʔ$ in Mocho'. Yucatec also has copied vowels as a reflex of PM *VʔC with high tone on the first vowel, similar to the intermediate stage of tonal development of Mocho' posited in Section 3.1.

3.4 Summary of Mocho' tone in diachronic perspective

Mocho' has word-final stress and phrase-final intonational stress that correlates with rising pitch. Long vowels with falling pitch are found only in word-final position. Long vowels with falling pitch are reflexes of Proto-Mayan *VʔC and likely PM *VʔVC sequences as well; as it was proposed that there was a merger of PM *VʔC and * V_1ʔV_1C in Mocho'. Preliminary investigation supports this development, as the few protoforms containing PM *VʔV identified for Mocho' were transcribed as /Vʔ/, (and are pronounced as long vowels with falling pitch in stressed syllables). It was proposed that tonogenesis in these falling pitch sequences took the following form: (1) PM *VʔC sequences developed an copy vowel articulation, merging with PM *V_1ʔV_1C, (2) falling pitch developed through laryngeal phonation on the second, rearticulated vowel, which developed falling pitch from the influence of a creaky variant of [ʔ] that persevered through the articulation of the second vowel, and (3) intervocalic [ʔ] was lost, leaving vowel length and falling pitch. Supporting evidence for this development include

comparison to a related language; the status of PM * $V_1ʔV_1C$ sequences in contemporary Mocho'; the synchronic patterns of production of $V_1ʔV_1C$ sequences (which have been formed by inflectional processes) in Mocho'; and the comparison of similar developments of preconsonantal PM *h in Mocho'.

Long vowels with falling pitch in Mocho' correspond to [$V_1ʔV_1C$] sequences in the related Tuzanteco language, and these sequences in both languages are pronounced with falling pitch (counter to the level or rising pitch of short vowels and unmarked long vowels). It was proposed that Mocho' and Tuzanteco shared the development of copied vowels and falling pitch, from that Mocho' developed long vowels with falling pitch. Tuzanteco may have been in the process of innovating a pitch contrast through another path of development, as there is evidence of vowel breaking occurring in unmarked long vowels and indications that some productions of lexical items with * $V_1ʔV_1$ nuclei are distinguished only by pitch. This potential development in Tuzanteco needs much more investigation.

Tonal development in other Mayan languages was compared to that in Mocho', revealing some commonalities and some differences in the patterns of development. Mayan languages have developed opposite tones from the same PM source: Yucatec developed high tone from PM *h while Uspanteko and San Bartolo Tzotzil developed low tone. Unlike the other languages, Mocho' did not develop tone from PM *h. Mocho', Uspanteko and Yucatec have innovated tone from PM *$ʔ$. Mocho' is the only Mayan language to have vowel length as a correlate of the marked tone (along with pitch), and the development of copied vowels in Mocho' was posited as a solution for this development.

Table 3.1 Mocho' *V?V* lexical items

Mocho' Form	English Gloss
tza'al	clothing
b'a'al	food
ku'ul	stomach, center, inside
nu'ul	younger sister, younger brother
si'il	rib, side
na'a (~na')	just
ma'an (~ma'a:n, ~ma')	maybe
PERSON-u'uj (~u'u:j)	RN 'because of PERSON'
je'e:l (~je'el, je:l)	particle, 'if, like'
ta'ach	directional, 'into'
junanh-e'=e	all-PL=BGND
po'ob'	hammock

Table 3.2. Proto-Mayan **V?VC* forms in Mocho'

Mocho'	Protoform	Gloss
chà:m	*tzaʔam (PEM)	nose
ch'ù:k	*chuʔuk (PEM)	thorn
pò:n	*poʔom (WM)	hogplum
jò:x	*hoʔox (WM)	food coloring and condiment

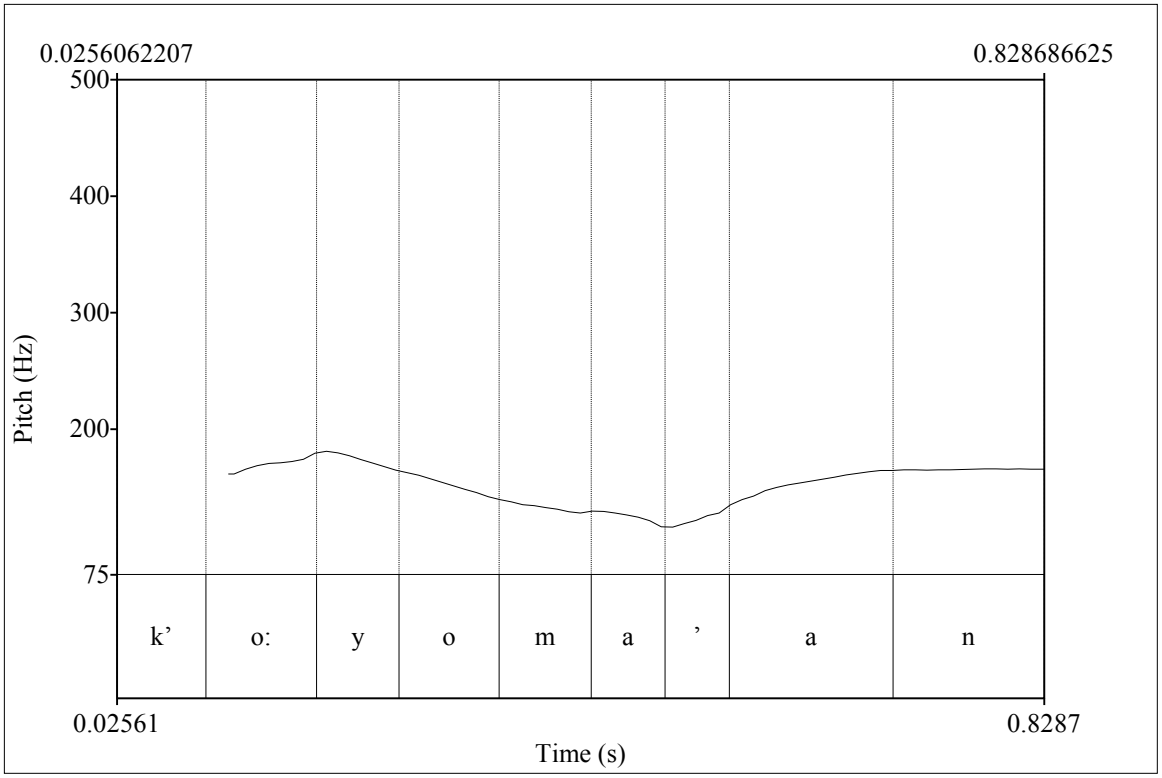

Figure 3.1. Pitch track of *k'o:yo ma'a:n* 'who knows'

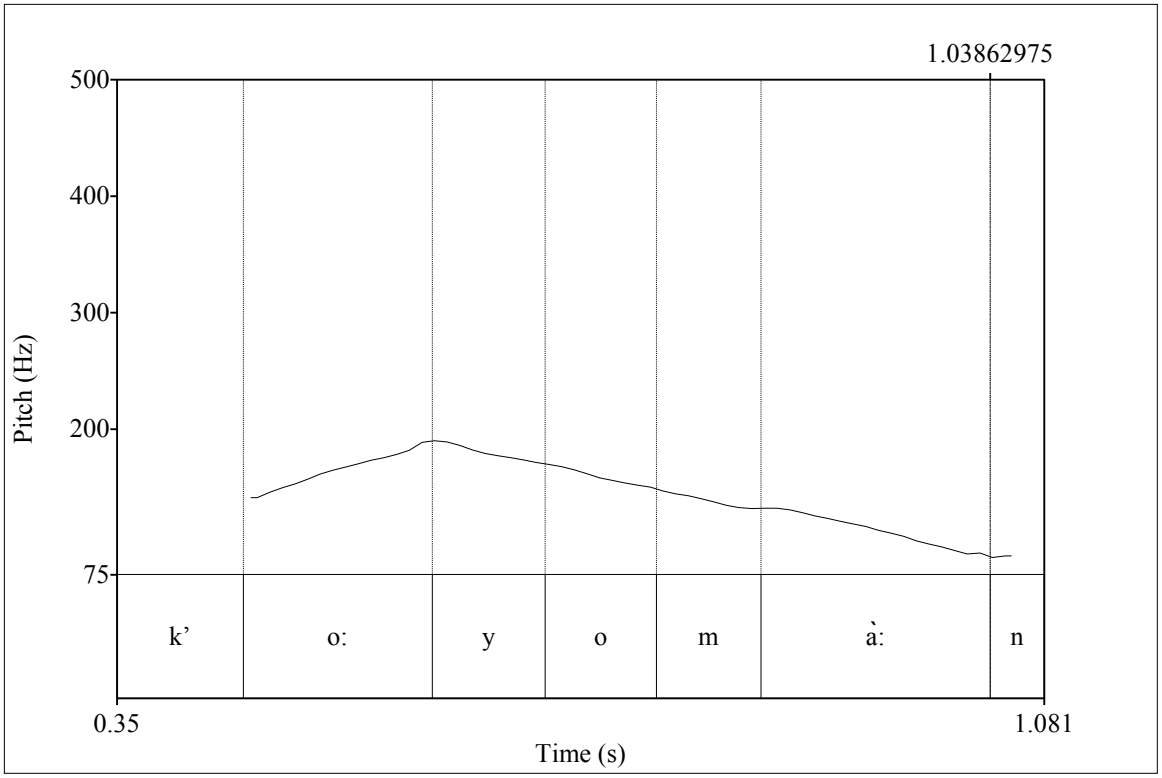

Figure 3.2. Pitch track of *k'o:yo mà:n* 'who knows'

Table 3.3. Proto-Mayan *VhC and *VjC sequences in Mocho' and Tuzanteco

Mocho'	Tuzanteco	Gloss	Proto-form		Proto-form Gloss
najab	--	'lake, pond'	PM	*najb	'pond'
najat	najat	'far'	PM	*najt	'far'
pajak'	pajak'	'piñuela fruit'	PM	*pajk	'pineapple'
pojoj	pojoj	'Benito Juarez (place)'	WM	*pohoj	'palm(ito)'
pojop	pojop	'woven mat'	PM	*pohp	'mat'
pojow	pojow	'pus'	PM	*pojw	'pus'
q'ojoq'	---	'chilacayote squash'	EM/GQ	*q'ohq'	'chilacayote'
sijib	---	'chipe (plant)'	PM	*tzihb'	'fern'
ajan	ajan	'ear of corn'	PM	*7ajn	'ear of corn'

Note: PM = Proto-Mayan; EM = Eastern Mayan; WM = Western Mayan; GQ = General Q'anjob'alan

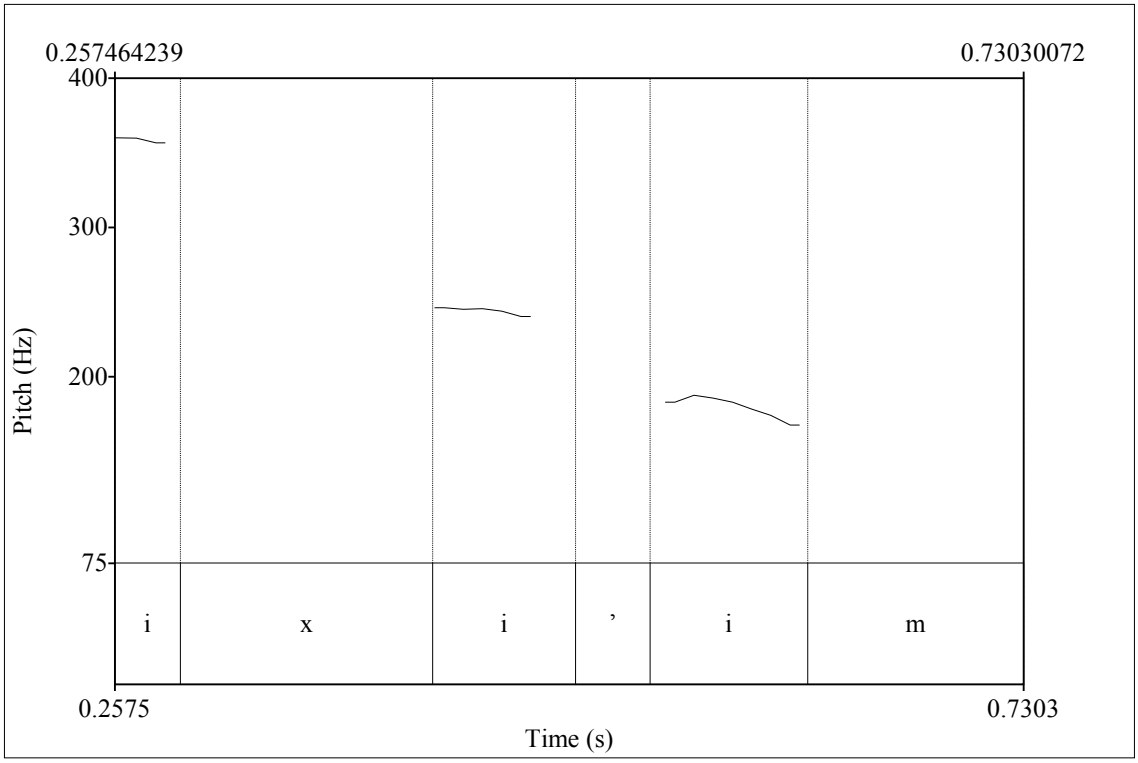

Figure 3.3. Pitch track of *ixi'im* 'corn' in Tuzanteco

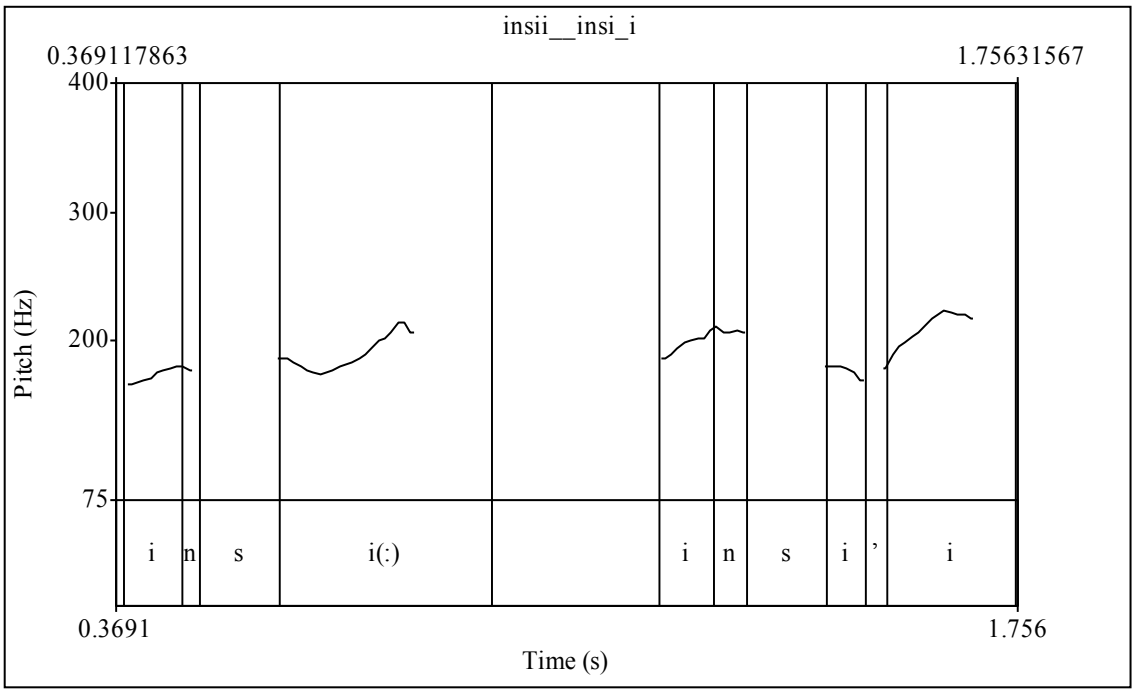

Figure 3.4 Pitch track of insi(:)'

Figure 3.5 Map of Mayan languages

Table 3.4. Shared tonal innovations in Mayan languages

Shared Tonal Innovations	Usp	SB Tso	Yuc	Mocho'
marked tone from PM *VhC	X	X	X	-
marked tone from PM *$V?C$	X	-	X	X
marked tone is low	X	X	-	X
marked tone is high	-	-	X	-
$V?VC$ from $V?C$	-	-	X	X
marked tone from PM *$V?\#$	X	-	-	-
marked tone from PM *$Vŋ$	X	-	-	?[10]

Note: Usp= Uspanteko; SB Tso= San Bartolo Tsotsil; Yuc= Yucatec

10 Campbell (1988:236) suggests that Mocho' vowels preceding [ŋ] also have falling pitch, a suggestion that deserves much more investigation. My preliminary work suggests that speakers do not regard vowels before [ŋ] in the same way as vowels from PM *V?. The falling pitch in these sequences may be phonetic rather than phonemic; however, much more thorough analysis of these sequences is necessary to confirm either possibility.

CHAPTER 4

SPANISH LOANWORD PHONOLOGY IN MOCHO'

4.1 Introduction

Loanwords from Spanish in American Indian languages have been studied intensively (see for example Bartholomew 1955, Boas 1930, Bright 1952, 1960, 1979a, 1979b, 2000a, 2000b, Bright and Thiel 1965, Brown 1999, Campbell 1976, 1991, Canfield 1934, Casagrande 1954, Clark 1977, Crawford 1979, Dockstader 1955, Dozier 1956, Fernández de Miranda 1964, Hill 1990, Hoijer 1939, Kroskrity 1978, Kroskrity and Reinhardt 1985, Law 1961, McLendon 1969, Muntzel 1985, Olson 1963, Parodi 1995, Sawyer 1964, Schlichter 1980, Spencer 1947, Stenson 1998, Trager 1944, Verbeeck 1999).

Bright, among the first to note specific patterns of loanword adaptation, found that innovations in Karok (now spelled Karuk) were phonological or lexical in nature, with no syntactic and morphological changes (1952). Spanish loanwords (hispanisms) in indigenous American languages have been found to conform to the phonological patterns of Spanish at the time the word was borrowed; often the period of time when the borrowing took place can be identified from the phonology of the loan (cf. Bright 1979, Clark 1977, Trager 1944, Spencer 1947, and Casagrande 1954). Clark recognizes three

periods or stages in borrowings from Spanish: Period I c.1520-1650, Period II c. 1650-1900, and Period III 1900-present (1977). However, as Bright points out, "the assignment of a word to a given period may be ambiguous" and "phonological evidence will not always yield chronological results" (1979:269). Nevertheless, Clark's periods are helpful as a relative guide. Mocho' loans can be segmented into two time periods based on syllable structure: early loans (Stage 1), and later loans (Stage 2). Clark's Period II and Period III cannot be reliably distinguished in Mocho'.

Stage 1 loans are more assimilated to Mocho', maintaining native Mocho' syllable patterns and adapting most nonnative sounds of origin words to Mocho' sounds as the loans are adopted. Stage 2 loanwords are less assimilated, with nonnative sounds and syllable patterns from Spanish. Some words are beween stages, allowing certain nonnative sounds but maintaining native syllable patterns. The following sections will describe Stage 1 and Stage 2 loanwords, the set of loanwords that is between stages, borrowed discourse particles, and the phonological adaption of personal names from Spanish.

4.2 Stage 1 loanwords

Early stage loans have been found in other languages to include those loans that diverge most from the shape of origin word (e.g., as in Trager 1944 for Taos). Some features of phonological loanword adaptation include changes to the phonetic shape of loans, consonant cluster simplification, and substitution of native consonants for nonnative ones. Stage 1 phonological adaptation patterns in Mocho' include consonant insertion and vowel deletion to conform to Mocho native closed-syllable root structure

(most roots in Mocho' are CVC and CVCVC, see Section 2.4), consonant cluster simplification, phonetic substitution, presence of final stress and high pitch as in native Mocho' words, and the adaptation of vowels in syllables with nonfinal (Spanish origin) stress to Mocho' plain long vowels. Table 4.1 shows a number of the hispanisms that conform to Stage 1 loans in Mocho'.

All of the examples in Table 4.1 show the adaptation of Spanish words to native Mocho' closed-syllable root structure that was found to be a useful criteria for assigning lexical items to Stage 1. If a word borrowed at this stage was vowel-final in Spanish, two strategies were employed to adapt the word phonologically to a consonant-final structure: 1) the consonants <j> [x] or <x> [š] were inserted word-finally, as in the first ten examples in the Table 4.1 (*pa:tanux, ko:kox*, *wa:kax*, *kuchilux*, *alanxex*, *me:xaj*, *mansanaj*, *kwa:yuj*, *kene:yaj*, *konex*); or 2) the final vowel was deleted, as in the last two examples in Table 4.1 (*pach* and *palo:m*).

Some consonant clusters were retained in early loans, while others were simplified through consonant deletion. Word-initial consonant clusters in particular were simplified while word-medial consonant clusters were often retained. This is not remarkable since word-medial clusters are found in Mocho' as a result of the process of vowel deletion (see 2.5.7). Consonant cluster simplification can be seen in (418) for the word-initial cluster *pl*.

(418) pa:tanux 'small banana' <Sp. pl̲átanos[11]

Word-medial clusters that were retained contained native sounds, as in *mansanaj* 'apple' and *alanxex* 'orange'. Word-medial clusters containing the nonnative sound *r*

[11] In this section, the stressed vowel in Spanish words is underlined.

were changed in Stage 1: in (419), *r* was deleted and in (420) *r* was changed to native Mocho' *l*.

(419) pach 'patch, patched' <Sp. parcha

(420) xalten 'frying pan' <Sp. sartén

Phonetic substitution in Stage 1 is found with Mocho' *w*, *x* [š], *l*, and vowel length as in examples (421) - (426) taken from Table 4.1.

(421) wa:kax 'cow' <Sp. vacas

(422) xa:ruj 'jug' <Sp. jarro

(423) kuchilux 'knife' <Sp. cuchillos

(424) ʔalanxex 'orange' <Sp. naranjas

(425) me:xaj 'table' <Sp. mesa

(426) karnerux 'sheep' <Sp. carneros

The adaptation of vowels in syllables with nonfinal stress as long vowels in Mocho' can be seen in many examples from Table 4.1 including *palo:m*, *ko:kox*, *wa:kax*, *me:xaj*, *kwa:yuj*, and *kene:yaj*.

Many Stage 1 phonetic substitutions in Mocho' show phonetic values that Spanish had before later sound changes in that language, including the following:

*l^y > Sp. [y]; Mch. [l] cf. *kuchilux* <Sp. cuchillo (kučiyo <earlier kučil^{y}o)

*š > Sp. [x]; Mch. [š] cf. *xa:ruj* [ša:rux] <Sp. jarro (xařo <earlier šařo)

*ṣ > Sp. [s]; Mch. <x> cf. *wa:kax* [wa:kaš] <Sp. vacas (bakas <earlier βakaṣ[12])

Some Stage 1 loanwords such as those illustrated in (427) – (433) were borrowed

12 *ṣ* is an apical (post-)alveolar)

with <x> [š], reflecting the inclusion of the Spanish plural marker in the Mocho' borrowing, from the earlier Spanish phonetic value of *ṣ* described above.

(427) pa:tanux 'small banana' <Sp. plátanos

(428) ko:kox 'coconut' <Sp. cocos

(429) wa:kax 'cow' <Sp. vacas

(430) kuchilux 'knife' <Sp. cuchillos

(431) ʔalanxex 'orange' < Sp. naranjas (see footnote[16])

(432) karnerux 'sheep' <Sp. carneros

(433) konex 'rabbit' <Sp. conejos

As mentioned above, the nonnative sound r (a voiceless trill word-initially and finally, a flap word-medially) was replaced by l in early Stage 1 loans, as in (434) and (435), or simply deleted (in a consonant cluster), as in (436).

(434) alanxex ~ alanxax 'orange' <Sp. naranjas[13]

(435) xalten 'frying pan' <Sp. sartén

(436) pach 'mended' <Sp. parcha

However, other evidence of loanword adaptation indicates that *r* was likely adopted early, unlike the nonnative phonemes *d* and *g* that were adopted in late loans. In (437) - (442), *r* was retained while the syllable structure of the Spanish origin word was altered to the closed-syllable root structure of Mocho'.

(437) ran 'frog' <Sp. rana

(438) pwertaj 'door, window' <Sp. puertas

---

13 As Bright (1979) notes, it is possible some loans did not come directly from Spanish but were acquired from other intermediary languages that borrowed the forms earlier from Spanish – 'orange', 'cow', and 'horse' are possible candidates.

(439) xa:ruj 'jug' <Sp. jarro

(440) karnerux 'sheep' <Sp. carneros

(441) bu:ruj 'burro' <Sp. burro

(442) mar 'very, truly' <Sp. mero

4.3 Stage 2 loanwords

Later loans in Mocho' are similar to late loans in other indigenous languages, with patterns that show the retention of Spanish phonemes not formerly found in Mocho' (including *d* and *g*) and the retention of Spanish stress and syllable structure that does not follow native Mocho' patterns. One interesting feature of Mocho' loanword adaptation is that long vowels with falling pitch are found in stressed syllables of loans that have nonfinal stress in the original Spanish form, perhaps indicating that Mocho' speakers made some association between stress and falling pitch as it developed into a tonal contrast in Mocho'. As stated above, in early loans these sequences were usually adapted as plain long vowels and the Mocho' pattern of final stress (with high pitch on the final syllable) was imposed. Thus, the innovation of tone in Mocho' was after the separation from Tuzanteco and likely around or after the time of contact with the Spanish (cf. Section 1.2). Examples of Stage 2 loans are shown in Table 4.2.

The pattern of phonological adaptation of Stage 2 loans appears to be productive, with present-day Spanish words commonly found in Mocho' utterances with a pattern of pitch substitution for Spanish stress, as in (443) and (444).

(443) pà:to 'duck' (cf. native Mocho' *pech*)

(444) sankù:do 'mosquito' (cf. native Mocho' *xè:n*)

The factors of stress and syllable structure in loans often give enough information to assign loans to Stage 1 or Stage 2; however, as mentioned above, some loans are difficult to assign to a stage based on their phonological structure. For example, examples (445) and (446) have stress (peak pitch) on the final syllable as is found in native Mocho' words and loans of Stage 1; however, the original Spanish forms also have final stress, so no adaptation would need to have taken place to fit Mocho' structure. However, example (446) can be assigned to Stage 2 because there is no adaptation of the nonnative phoneme *g*.

(445) balor 'brave' (AJ) <Sp. valor 'bravery' (N)

(446) galan 'pretty' (AJ) <Sp. galán 'handsome, elegant' (ADJ)

Both Stage 1 and Stage 2 loans can be found in inflected forms, for example, inflected for possession in nouns as in (447) or person in verbs as in (448).

(447) ji juune i:-kwa:yuj

PRN.LOC one 1SG.POSS-horse

'I have a horse'

(448) i:-gà:na we jubej junanh

1SG.SU-like DEF flower all

'I like flowers' (gà:na <Sp. *gana 'desire, want'*)

4.4 Unusual loanwords

Two loanwords have quite unusual shapes, not found elsewhere in either Spanish or Mocho, illustrated in (449) and (450).

(449) kpalej 'compadre' <Spanish *compadre* 'godfather, friend'

(450) kmalej 'comadre' <Spanish *comadre* 'godmother, friend'

These roots can be inflected for possession with person prefixes: when prefixed with the third person possessive prefix *x*- a CCC word-initial consonant cluster (of *xkm*) is formed, as shown in (451).

(451) x-kmalej [škmalex] 'her comadre' (3SG.POSS-comadre)

The initial vowel was likely deleted as part of the phonological process of deletion of unstressed vowels (see 2.5.7). A word-initial consonant cluster is rare in Mocho'; in native words it is only likely to occur when aspect prefixes are adjacent to a following consonant. One of the aspect prefixes is *k*-; in present-day Mocho' it occurs only before vowels and sonorants, but one possibility is that speakers may have associated the initial consonant *k* in these loanwords with the aspectual *k*- prefix.

4.5 Conjunctions and particles

Borrowing of discourse particles from Spanish, especially conjunctions, is encountered in a number of Mesoamerican languages (cf. Bright 1979, Brody 1978, 1995, Suárez 1977). Brody (1978) has identified rather extensive borrowing of these particles in Mayan languages; a few particles from this word class are found in Mocho'. Some discourse particles borrowed from Spanish that occur commonly in Mocho' texts are given in Table 4.3.

4.6 Personal names

Personal names in Mocho' are usually adapted from Spanish and can appear as Stage 1 or Stage 2 loanwords. When a Mocho' speaker is speaking Spanish, the modern Spanish form of the name is used, but when she is speaking Mocho', the Mocho' form is used.

Examples (452) and (453) are Stage 1 personal names of Spanish origin in Mocho while (454) and (455) are Stage 2 personal names of Spanish origin.

(452) max 'Tomas'

(453) mon 'Ramón'

(454) mà:ri 'María (Mara, Mari),'

(455) mì:lo 'Emilio'

Many Mocho' personal names are found in more than one form. For example, five different forms are found for the personal name *Pedro*, as shown in (456). All were cited by the same speaker as variant forms, representing Spanish *Pedro* and *Lucho*, the Spanish nickname for *Pedro*. (Note that all variants of (456) likely belong to Stage 1 due to the CVC or CVCVC syllable structure and absence of nonnative phonemes.)

(456) (a) pe:luch,

(b) pe:luʔ

(c) luʔ

(d) lu:ʔ

(e) lu:ch

However, some personal names are found with both Stage 1 and Stage 2 forms, as in (457).

(457) (a) lit 'Margarita'

(b) lì:ta 'Margarita'

Some personal names show a mix of Stage 1 and Stage 2 patterns not found with any other types of nouns in Mocho': that is, the phonological adaptation to Mocho' syllable structure of Stage 1 loans is found in combination with the falling tone on stressed syllables found in Stage 2 loans. Examples (458) and (459) show this combination that is intermediate between Stage 1 and Stage 2.

(458) mà:x 'Tomasa'

(459) pè:x 'Lupercio'

Other personal names that are loans from Spanish and follow the patterns described in the preceding section are illustrated in (460) - (474).

(460) weles 'Felix'

(461) tè:lo 'Sotero'

(462) tò:l 'Bartolo'

(463) pa(:)luʔ 'Pablo'

(464) toyan 'Victoriana'

(465) wel 'Manuel'

(466) wan 'Manuela'

(467) yak 'Siriaco'

(468) yan 'Vitoriano'

(469) yaw 'Santiago, "Santiawo"'

(470) ʔem 'Guillermo'

(471) lij 'Elijio'

(472) nà:yo 'Genaro' [Nayo]

(473) pè:pa 'Josefa' [Pepa] (Pepa is Spanish nickname for Josefa)

(474) tà:ko 'Eustaquio'

4.7 Summary of Mocho' loanword phonology

In summary, Mocho' loanwords from Spanish can be assigned to stages as found for many other indigenous languages, with early loans being adapted to native syllable structure using native Mocho' sounds, and later loans retaining Spanish syllable structure and nonnative Spanish sounds. Some words in Mocho' are between stages; this is a reflection of the difficulty in assigning words to discrete time periods such as those established by Clark (1977). The correlation of stress with plain long vowels in early loans and long vowels with marked tone in later loans is of some significance. Thus, Mocho' adaptation of Spanish loanwords gives further evidence toward the time period of the incipience of the tonal contrast. Since falling tone is not found in early loans but is found in late loans, the development of contrastive tone in Mocho' was likely after Spanish contact and significant initial borrowing occurred: further detailed study of loanwords in Mocho' may yield evidence for a more precise time period.

Table 4.1 Stage 1 loans in Mocho'

Mocho' word	Gloss	Spanish origin	Alternate Forms
pa:tanux	'small banana'	plátanos	~ pa:tnux
ko:kox	'coconut'	cocos	
wa:kax	'cow'	vacas	
kuchilux	'knife'	cuchillos	
alanxex	'orange'	naranjas	~alanxax
me:xaj	'table'	mesa	
mansanaj	'apple'	manzana	
kwa:yuj	'horse'	caballo	
kene:yaj	'banana'	guineo	~keneyaj
konex	'rabbit'	conejo	
xalten	'skillet, frying pan'	sartén	
pach	'patch, patched'	parcha	
palo:m	'bird'	paloma	

Note: the stressed vowel in Spanish words is underlined.

Table 4.2 Stage 2 loans in Mocho'

Mocho' Word	English Gloss	Spanish Source
pè:pa	'pimple'	pepa
pè:na	'just'	apenas
gà:na	'desire'	gana
lagà:rto	'alligator'	lagarto
semà:na	'week'	semana
alè:gre	'happy'	alegre
kontè:nto	'content'	contento
chì:bo	'goat'	chivo
kà:ldo	'soup'	caldo
gà:nso	'goose'	ganso
gà:rsa	'crane'	garza
pà:to	'duck'	pato
sankù:do	mosquito	zancudo

Table 4.3. Mocho' discourse particles borrowed from Spanish

Mocho' Word	English Gloss	Spanish Origin
na:ba'	'just; only'	nada mas
pè:na	'barely, with difficulty'	apenas
ke	'that'	que
lo ke	'that which	lo que
y	and	and

CHAPTER 5

ROOTS AND WORD CLASSES

5.1 Introduction to roots and word classes

Mocho' has a rich system of derivation. Root classes include nouns, intransitive verbs, transitive verbs, positionals, adjectives, adverbs (including directionals), and particles. The word classes that will be described in this chapter are nouns, intransitive verbs, transitive verbs, and positionals (derivational processes for adjectives are described in Chapter 8; adverbs and particles do not have derivational processes and are described in Chapter 10). Several strategies for derivation are found in Mocho': a few are illustrated with the example root *nhaj* 'house', shown in (475) as a noun root inflected for person.

(475) xnhaj 'his house' (*x-nhaj* 3POSS-house)

(476) nhajo:m 'he lives, he makes his home' (*nhaj-o:m* 'house-AGT.N')

(477) we i:-ba:luk nhaj-o:m ti wanhab

DEF 1SG-brother.in.law house-AGT.N PREP town

'my brother-in-law lives in town'

(478) nhaji:n 'he lives' [lit. he houses; he is housed] *(nhaj-i-:n* 'house-V-AP')

(479) nhaj-i-:n-qe tete

house-V-AP-3pl there

'they lived there' (lit. 'they housed themselves there)

5.2 Nominal roots and derivation

Nominals can occur in root form without derivation or formative suffixes. Most nominal roots are (C)VC or (C)VCVC in structure; with the exceptions of borrowed words, grammaticalized forms, and onomatopoeia other root structures are rare.

Nouns can be derived productively with several suffixes. A list of nominal derivational suffixes is given in Table 5.1, along with Kaufman's original descriptions (when available) and examples of derived nouns. Note: suffixes found only in Kaufman (1967) are identified with an asterisk.

Kaufman (1967:xi) also lists several additional suffixes that are not productive. Those suffixes are not included above if they are not well-represented in the present data; they are listed in Table 5.2.

Mocho' has three noun classes that have different inflectional processes for possession. The noun classes and processes of nominal inflection including person, number, and possession are presented in Chapter 7.

5.3 Verb roots and derivation

Most verbs have canonical PM root forms of (C)VC, with (C)VCVC and (C)VCC also found; likely most (C)VCVC are from grammaticalized inflected forms ((C)VC-VC) and most (C)VCC are from grammaticalized inflected or derived forms with vowel

deletion ((C)VCVC > (C)VCC) (cf. 2.5.7). However, verb roots do not appear in canonical form since they must occur with a formative suffix of the shape -V. The shape of the formative suffix differs for transitive and intransitive verbs and in part by the semantic characteristics of transitive verbs. The following sections describe the root structure and formative vowels for intransitive verb roots, transitive verb roots, and bivalent roots.

5.3.1 Formative vowels and verb classes

Verbs occur with vowel formatives that can be classified according to transitivity. A summary of vowel formatives is given in Table 5.3 and explained in the following section.

The vowel *-i* is used in four contexts: to form intransitive verbs, to form transitive verbs from noun roots, to mark detransitivized verb forms, and rarely, to form transitive verbs. The formative vowel for intransitive roots is *-i* except with roots with the vowel *e* followed by a single consonant, in that case the intransitive formative is assimilated to *-e* [14]. Bare roots with the intransitive formative occur as third person completive forms; some examples are given in (480) - (490).

(480) kam-i 's/he died'

(481) ch'a:w-i 's/he entered'

(482) tap-i 's/he got better'

(483) bi:t-i 's/he got sick' (also a positional root)

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14 Note: consonant clusters likely represent grammaticalized forms with deleted vowels (see Section 2.5.7), which have blocked vowel assimilation for those suffixes.

(484) ki:b-i 's/he grew' (also a positional root)

(485) tow-i 's/he spent time'

(486) oq'-i 's/he cried'

(487) lup-i 'it flew'

(488) u:l-i 's/he arrived'

(489) ken-e 's/he stayed'

(490) meltz-i 's/he returned'

A second function of *-i* is as part of an extremely productive process of deriving verbs from noun roots. It occurs most often in conjunction with the middle voice suffix *-:n* (see 9.4) but does occur rarely without it, as shown in (491) for the noun root *pò:x* 'medicine, cure'.

(491) x-ñej kwa:yuj x-po:x-i i:-k'u'ul

3POSS-tail horse INC.3ERG-medicine-V 1SG.POSS-stomach

'the horse tail herb cures my body'

The verb form derived from a noun with *-i* is transitive, as illustrated by the marking of both subject and object, as in (492).

(492) x-po:x-i-qin

INC.3ERG-medicine-V-1.SG.O

'he healed me'

The phonological shape of the *-i* formative suffix is assimilated to *-e* following roots containing the vowel *e* followed by a single final consonant, as shown in examples (493) and (494) for the noun *be:j* 'road'.

(493) be:j-e

road-V

'walk'

(494) chk-i:-be:j-e-:n ti q'ach

INC.PROG-1SG.SU-road-V-MID PREP earth

'I am walking around on the earth'

A third function of the intransitive suffix *-i* is as a morphological marker of transitivity. It occurs following the detransitivizing passive and middle voice suffixes and serves to identify the verb form as intransitive. This intransitive-marking suffix only appears when the derived form is the final element in the verb phrase, does not vary in phonological form, and does not occur if there are person suffixes or clitics attached to the verb or if there is a following noun or adverb that forms part of the phonological phrase (breath group). This suffix is likely a descendent of the PM suffix *-ik that is found with a similar pattern in K'ichean and Q'anjob'alan languages (see, e.g., Robertson 1992:62 for PM; Day 1973:28 for Jakalteko). An example of this suffix is given in (495), which is a form in isolation; note the contrast with (496), which has a following object as part of the phonological phrase and does not have the intransitive-marking suffix.

(495) tuk'-u-:n-i

cut-TV-MID-IV

'cutting'

(496) tuk'-u-:n kafe

cut-TV-MID coffee

'cutting coffee'

Finally, *-i* is used with a limited handful of verb roots to form transitive verbs; including *a:b-* 'to hear' and *istaw-* 'to find'. A few additional transitive roots formed with *-i* found in Kaufman (1967) include *yu:ch-* 'to mend clothes', *yuq'-* 'to wring out washing', *a:jax-* 'to make shade'.

Neutral transitive stems are formed from roots with *-a* with all roots except those containing *o*, in that case the transitive formative is *-o*; several examples are provided in (497) - (504).

(497) tzanh-a 'cook'

(498) man-a 'buy'

(499) i:tz'-a 'know it'

(500) bi(:)t-a 'sing'

(501) tzu:b-a 'spit'

(502) uk'-a 'drink'

(503) chonh-o 'sell'

(504) po:ch'-o 'kill'

The vowel *-u* forms transitives with a special meaning; likely instrumental (cf. Kaufman 1967). The class of instrumental transitives appears to encompass actions done with implements or body parts; some examples are given in (505) - (510).

(505) tuk-u 'to cut'

(506) chuk-u 'stir (with spoon)

(507) muq-u 'to see (with eyes)'

(508) me:s-u 'sweep' cf. mè:s 'broom'

(509) loq'o 'catch (with hands)'

(510) lo'-o 'eat (holding in hands or with tool)'

A few roots occur with either *-u* or *-a* and have different meanings; while both are transitive, the form with *-u* usually refers to an action involving an instrument or body parts, as shown in the pairs of examples in (511) - (514):

(511) lenh-u 'make tortillas' (with action of slapping dough back and forth in hands)

(512) lenh-a 'roast' (over open fire on a spit)

(513) qi:l-u 'run' (with legs)

(514) qi:l-a 'chase'

5.3.2 Transitive roots

Transitive roots can be divided into two classes based on their behavior with -(o):n, the middle voice suffix (see 9.4). One set of transitive roots occurs with the suffix form of *-o:n* and no formative vowel, as in (515)-(518), while a second set occurs with a verb formative vowel and a reduced form of the suffix (-:n), as in (519)-(522).[15] Note that the root vowel is often lengthened when suffixed with either form of the middle voice suffix.

(515) tza:k-u	tza:k-u:n	'grind corn'
(516) bis-u	bi:s-u:n	'think'
(517) xibt-a	xibt-a:n	'scare'

15 One constraint on the occurrence of -o:n is that it never appears with roots containing u; this is in accordance with a phonological pattern of assimilation of rounded vowels in suffixes to the same value as the vowel in a root. That is, when a suffix with *o* is affixed to simple roots containing the vowel *u* the suffix vowel becomes *u*, and when a suffix with *u* is affixed to simple roots containing the vowel *o* the suffix vowel becomes *o*.

(518) 'a:w-a	'a:wa:n	'shout'
(519) ch'a:j-a	ch'a:j-o:n	'wash something'
(520) t'eq-a	t'e:q-o:n	'hit'
(521) i:l-a	i:l-o:n	'see'
(522) i:k'a	i:k'-o:n	'bring'

In some work on Mayan languages, transitive verbs are divided into two classes: the first consists of primary or underived root forms, represented with "T" for transitive verbs, and the second consists of stems composed of a root and vowel formative, represented with "t" for transitive verbs. (cf. Kaufman 1967; Smith-Stark 1978). These classes can be distinguished since members of each class may have different patterns of use, as is illustrated by the two forms of the middle voice suffix in Mocho' described above. In Mocho', a verb root cannot belong to both classes: it is either a root transitive (T) that is marked with *-o:n* for the middle voice or a transitive stem (t) that occurs with its stem vowel and the phonologically reduced *-:n* suffix for middle voice. An interesting semantic correlation is that the class of root transitives (T) are all verbs of expected transitivity: that is, they correlate with high transitivity on the scale introduced by Hopper and Thompson (1980). Some characteristics of higher transitivity identified in Hopper and Thompson (1980:252) include activities that have two participants, are telic, punctual, realis, volitional, affirmative, involve actions, have the O(bject) totally affected and highly individuated and the A(gent) high in potency. Although many verbs are morphosyntactically transitive in Mocho', the class of root transitives (T) includes members that are all high on the transitivity scale. A list of example T roots is given in Table 5.4.

5.3.3 Verb derivation

Several suffixes are used in verb derivation. The most common are included in Table 5.5. Kaufman (1967) lists several derivational suffixes that are classified as not productive; they are listed in Table 5.6 with Kaufman's original glosses.

5.4 Positional roots

Positional roots form a class in Mocho' (also found in the other Mayan languages) characterized by reference to physical qualities such as shape, position, or texture. The phonological form of all positional roots is CVC. Positional roots can occur in usage as adjectives or related transitive roots (Kaufman 1967), but positionals are considered a distinct class because they take two distinct suffixes: namely, *-ba* 'causative transitive' and *-w* 'intransitive' (Kaufman 1967:ix). Positional roots in Mocho' occur with a formative suffix *-a(:)n* that is designated by Kaufman (1967) as forming an adjective and that may be related to the middle voice suffix (see 9.4). Positionals with the adjectival *-a:n* suffix are clearly not equivalent to transitive or intransitive verb forms: they do not inflect for aspect and they form predicate adjectives with the Set B personal pronouns found on predicate nominals, not those found on verbs (see Chapter 6). Examples of positional roots are provided in (523) and (524):

(523) ba:ch- 'twisted'

(524) sak'- 'alive'

Example (525) contains the suffix *-w* that occurs on positional roots (Kaufman 1967:ix terms it “ingressive/reflexive”) followed by the intransitive marker *-i*.

(525) sak'-w-i 's/he was born'

5.5 Dual roots

Some roots can be transitive or intransitive in use, as they occur with both intransitive and transitive formative vowels, as shown for the pairs illustrated in (526) and (527) for *wa'* and (528) and (529) for *i:k'*.

(526) wa'-i 'eat-IV'

(527) wa'-a 'eat.corn.products-TV' (tortillas, tamales, etc.)

(528) i:k'-i 'pass-IV'

(529) i:k'-a 'carry-TV'

The transitive status of these roots in use is transparently indicated by the formative vowel, but likely have a common source and have a shared core root meaning. A few roots are also found as both positionals and transitives or positionals and intransitives. Examples (530) - (532) show the root *bit* 'sick' derived as an intransitive verb in (531) and as an adjective from a positional root in (532).

(530) bit P, IV 'be sick'

(531) chk-i:-bi:t-i

INC.PROG-1SG.SU-be.sick-IV

'I continue to be sick'

(532) bit-a:n-in

be.sick-ADJ-1SG

'I am sick'

Example (531) is clearly a full intransitive verb, with the intransitive formative vowel *-i*, an aspect prefix *chk-*, and a first person prefix *i:-*. Example (532) has the status

of a predicate adjective and occurs with an adjectival formation suffix *-a:n* and a first person suffix *-in*: adjectives cannot be marked for aspect.

5.6 Summary of roots and word classes

Nouns can occur as bare roots but verbs must have a formative suffix; formative suffixes are of the shape *-V* and with few exceptions classify the verb root as intransitive, transitive, or transitive instrumental. It was proposed that Mocho' has a class of highly transitive roots that can be identified by the form of certain suffixes, including middle voice (and perhaps others). As in other Mayan languages, positional roots are a distinct class that indicates several semantic properties such as shape, texture, and position; bare positional roots do not occur but must be derived as adjectives or transitive verbs. Finally, several derivational suffixes are used to derive verbs and nouns, some indicating specific semantic qualities such as causative, agentive, abstract, or instrumental.

Table 5.1 Productive nominal derivational suffixes

Suffix	Derived Word Class	Word Class (occurs on)	Kaufman's Designation	Examples
-e(:)j	noun	v	tv, iv → vn	*i:wa:che:j* 'my sleep' > *wa:ch-*' 'to sleep'
-e:l	noun	n, v, aj	tv, iv → vn	*k'awe:l* 'wound' (noun) > *k'aw-* 'to wound'
-i:l, -a:l	(possessed) noun	n	n→ n [special meaning]	*me:ba'i:l* 'poverty' > *me:ba* 'poor
-o:m	agentive noun	v, aj	adjective/active participle noun/agentive	*q'atzo:m* 'teacher' > *q'atz-* 'to teach'
-oma:n	agentive noun	v	---	*po:ch'oman* 'those who kill' > *po:ch'-* 'to kill'
-obal	noun (result)	tv	adjective/passive participle noun/resultant patient	*noq'o:bal* 'powder' > *noq'-* 'to grind'
-ela:l	abstract noun	n	---	*kamela:l* 'the deceased' > *kam-* 'to die'
-be'	noun (instrument)	v	transitive/instrumentive	*patzbe* '(a) lie' > *patz-* 'to deceive'
-tal*	place	iv	noun/place	
-len*	noun (result)	iv	noun/result	
-laq*	noun (aggregation)	n (inanimate objects)	place where the item is found in large numbers or amounts	

Note: vn= verbal noun; iv= intransitive verb; tv= transitive verb; n= noun; v= verb; aj= adjective.

Table 5.2 Nonproductive nominal derivational suffixes

Suffix	Gloss
-tal	tv → noun
-el	tv → vn
-bal	iv → noun
-ben	iv → vn

Table 5.3 Verb formative suffixes

Verb Formative Suffixes	
Vowel	Occurs on
-i	intransitive verb without *e* in root transitive verb from noun without *e* in root transitive verb (rare) derived intransitive marker
-a	transitive verb without *o* in root
-u	instrumental transitive verb without *o* in root

Phonologically Harmonic Verb Formative Suffix Forms	
Vowel	Occurs on
-e	intransitive verb with *e* in root (< -*i*) transitive verb from noun with *e* in root (< -*i*)
-o	transitive verb with *o* in root (< -*u*) instrumental transitive verb with *o* in root (< -*u*)

Table 5.4 Mocho' highly transitive roots

Root	Gloss
ch'aj-	wash (e.g., clothes, dishes)
saq-	wash (e.g., clothes)
maj-	look for s.o.
aq'-	give s.t. to s.o.
ik'-	bring s.t.
t'eq-	hit (pound) s.o, s.t
il-	see s.o., s.t.
lax-	scratch s.t.
mik-	converse with s.o.
man-	buy s.t.
al-	say s.t. to s.o.

Note: s.t. = 'something'; s.o. = 'someone'.

Table 5.5 Verbal derivational suffixes

Suffix	Gloss	Word Class (occurs on)	Kaufman (1967)
-(o):n	middle voice	v	absolutive
-j, -ech*	passive	tv	intransitive/passive
-sa	causative	v	transitive/causative
-(e:)x*	reflexive	tv	intransitive/ingressive| reflexive
-u	transitive causative	iv	transitive/causative
-a:j*	intransitive volitive	iv	intransitive/volitive

Note: Suffixes that were identified in Kaufman (1967) but are not found in the present data are indicated with an asterisk.

Table 5.6 Nonproductive verbal derivational suffixes

Suffix	Function
+be'	various → tv
-ta'	various → tv
+le	various → tv
-sa'	tv → caus
CVC → CV:Cu'	T, P → tv
-q'	T, P → iv
-p	T, P → iv
-k	T → iv
-m	T → iv
-tz'	P → iv
-tz	P → iv
-t	P → iv
-ch	A → intransitive

CHAPTER 6

PRONOMINAL PERSON

6.1 Pronominal person affixes

Person in Mocho' is indexed on the verbs with prefixes and suffixes in a split ergative alignment that is unique among the Mayan languages. Subject and object nominals are not morphologically marked for grammatical role, so the only indication of the grammatical role of subject and object is in the verbal crossreferencing affixes. Person affixes occur on verbs, possessed nouns, and adjectives and nominals functioning as predicates. The affixes that occur in different word classes are clearly related (quite similar or identical in form). Singular person is marked with prefixes or suffixes, while the plural suffixes are portmanteau morphemes that indicate both person and number. Number that is not tied to person (e.g., plural nouns) can be indicated with the third person plural suffix but is not usually marked in Mocho' for nonhumans, except for emphatic purposes.

Pronominal forms are divided into two sets according to traditional classifications in Mayan linguistics: Set A are prefixes (with plural person suffixes) and Set B are

suffixes.[16] Prefixes have two different forms based on the phonological form of the root: one set of person prefixes occurs before consonant-initial stems, and the second set before vowel-initial stems.

Set A affixes and Set B suffixes have distinct functions. The Set A affixes reflect Proto-Mayan (PM) ergative and possessive markers and are used in Mocho' for the grammatical roles of pronominal possessor of a noun (N); first or second person subject of an intransitive verb (S); and first, second, or third person agent (subject) of a transitive verb (A). The Set B suffixes reflect PM absolutive pronouns and are used in Mocho' for transitive O (first, second, or third person), third person intransitive S, and marking the subject of nonverbal predicates such as subjects of equational clauses (e.g., *he is a teacher*; henceforth identified as predicate nominals) and predicate adjectives (e.g., *she is tall*). All plural pronominal persons are indicated by the appropriate person prefix plus suffixes indicating plural number, with the exception of third person plural subjects of nonverbal predicates. The sets of person markers are given in Table 6.1 and discussed in the following sections.

6.2 Mocho' split ergativity

As stated above, Mocho' has a split ergative system: that is, in some grammatical contexts it has nominative-accusative alignment and in others it has ergative-absolutive alignment, as described in the following paragraphs. In languages with nominative-accusative alignment, the agent or subject of a transitive verb (A) and the subject of an

16 In Proto-Mayan, Set A affixes have been reconstructed markers of ergative and possessive pronouns and Set B affixes mark absolutive pronominal persons; see, e.g., Larsen and Norman 1979.

intransitive verb (S) have the same morphological form (nominative), while the object of a transitive verb (O) is marked differently (accusative). In ergative-absolutive alignment, S and O have the same morphological marking (absolutive) while A is marked differently (ergative).

Mocho' evinces a type of split ergativity that is related to the nominal features of person categories. Silverstein (1976) proposed a hierarchy of nominal features, summarized as:

> 1st and 2nd person > third person pronouns > proper nouns > human nouns > animate nouns > inanimate nouns

Nouns or pronouns higher on the hierarchy are more likely to have accusative marking while those lower on the hierarchy are more likely to have ergative marking . The mixed alignment system in that languages have ergative-absolutive marking for some nominals and nominative-accusative marking for others is called *split-ergative*. In split-ergative systems, the split in alignment is expected to be categorial somewhere along the animacy hierarchy. That is, if any of the nominals in a particular language have ergative marking, all of the nominals lower on the hierarchy also have ergative marking (cf. Silverstein 1976, Campbell and Norman 1978; Dixon 1994).

In the Mocho' split-ergative system, the split between nominative-accusative and ergative-absolutive alignment distinguishes first and second persons (Speech Act Participants, henceforth SAP) from third persons, proper nouns, and common nouns. SAPs are marked on the verb with nominative-accusative alignment while third persons are marked with ergative-absolutive alignment. The following sections illustrate verbal alignment with examples of SAPs and third person arguments in subject and object role.

6.3 First and second person marking

The examples in the following section illustrate first and second person marking. Examples (533)-(534) have SAP subjects of intransitive constructions: they are marked as intransitive with the intransitive formative *-i* and have person prefixes from Set A.

(533) k-**i:**-wa'-i

POT-1SG.SU-eat-IV

'I'm going to eat'

(534) k-**a:w**-u:l-i

POT-2.SU-come-IV

'you will come'

The following examples have SAP subjects in transitive constructions; in (535)-(538) the object is third person (absolutive) that is marked with a zero morpheme.

(535) k-**i:**-tz'ib-a-Ø

POT-1SG.SU-write-TV-3ABS

'I am going to write it'

(536) k-**a:w**-il-a-Ø

POT-2.SU-watch-TV-3ABS

'(you) take care, watch (out)' (lit. 'you see it')

(537) k-**a:**-ma:n-a-Ø ju:ne a:-tz'ikin

POT-2SU-buy-tv-3ABS one 2POSS-chicken

'you are going to buy a chicken' or 'go buy a chicken!'

(538) Ø-**i:**-po:ch'-o-Ø

CMP-1SG.SU-kill-TV-3ABS

'I killed it'

Examples (539) - (540) show SAP subjects of derived intransitive constructions; both examples are of nouns derived as transitive verbs with *-i* (see Section 5.2.1), then morphosyntactically intransitivized with a passive suffix in (539) and middle voice suffix in (540).

(539) Ø-**i:**-po:x-i-j-i

CMP-1SG.SU-medicine-IV-PASS-IV

'I was cured'

(540) ya k-**a:w**-ajl-i-:n-i'

because POT-2SU-work-V-MID-IV

'because you are going to work

A verb with a first or second person object of an intransitive is marked with a Set B suffix, as in (541)-(542).

(541) k-i:-ma:k-a-**qa:**

POT-1SG.SU-hit-TV-2SG.O

'I'M GOING TO HIT (PUNISH) YOU'

(542) Ø-x-po:x-i-**qin**

CMP-3ERG-medicine-IV-1SG.O

'he cured me'

6.4 Third person marking

A third person subject (A) of a transitive construction is marked with a set A ergative prefix, while a third person subject of an intransitive (S) is marked the same as a third person object of a transitive (O), which is with a zero morpheme. An example of third person A is found in (542) above, where the A is third person and the O is first person, and (543), where both A and O are third person singular.

(543) we po:x-om Ø-**x**-po:x-i-**Ø** i:-mì:m

DEF medicine-AGT CMP-3ERG-cure-IV-3ABS 1SG.POSS-mother

'the curer healed my mother'

Third person plural is marked with a suffix on the verb that is not marked for for A, S, or O role. Third person plural is is straightforward in intransitive constructions that have only one core noun, as in (544).

(544) cha:wi-**qe** ti ju:ne cha:q'an teje kene-**qe**='a

arrive-3PL PREP one plain there stay-3PL=BGND.LOC

'they arrived at a plain and there they stayed'

For transitive sentences, third person plural is not tied to the grammatical role of the nominal participants and must be interpreted from context. For example, in (545) both A and O are third person, and it is unclear that argument is plural: that is, in Mocho' any of the three glosses listed is possible without further context.

(545) **x**-qan-a-qe

3ERG-ask-TV-3PL

'he asked them' or 'they asked him' or 'they asked them'

An additional issue of interpretation involves the form of the third person ergative

prefix. The pronunciation of the homophonous 'incompletive' and 'third person ergative' prefix follows a general phonological pattern that is not completely predictable; it varies between *ch-* [č] or *x-* [š]. The form of *ch-* appears before vowels, as in (546), and *x-* is often, but not always, the prefix that appears before consonants; in (547), *x-* occurs before a consonant whereas in (548), *ch-* occurs before a consonant.

(546) **ch**-a:-t'eq-a-qin

INC-2.SU-hit-TV-1SG.O

'you are hitting me'

(547) **x**-qa-maj-o:n-o:' wa:kax

INC-1PL.SU-look.for-MID-1EXCL cow

'we were looking for cows'

(548) **ch**-be:j-e-:n-qe

INC-path-IV-MID-3PL

'they are walking around'

In addition to the variability of form between *ch-* and *x-*, the homophony of these prefixes (with both incompletive aspect and third person ergative functions) complicates interpretation of meaning. In many transitive constructions it is impossible to know without additional contextual information if the prefix indexes incompletive aspect or completive aspect together with third person ergative (see Section 9.3 on Aspect). The two potential interpretations of the *ch-/x-* prefix with transitive verbs are illustrated with the verbs *q'atza* 'teach s.o.' and *po:ch'o* 'kill s.t. or s.o'. are shown in (549) and (550), respectively:

(549) **x**q'atza [Ø-x-q'atz-a CMP-3ERG-teach-TV] or [x-x-q'azt-a INC-3ERG-teach-TV]

'he taught him' or 'he teaches him, he is teaching him'[17]

(550) **x**po:ch'o [Ø-x-po:ch'-o CMP-3ERG-kill-TV] or [x-x-po:ch'-o INC-3ERG-kill-TV]

'he killed him' or 'he kills him, he is killing him'

The syncretism of third person ergative and incompletive aspect prefixes makes it impossible to determine whether the ergative system is still in use in incompletive aspect: there is no evidence that can conclusively show that it is in fact completely lost, but both the third person ergative and incompletive prefixes are neutralized through merger.

The ambiguity regarding the *ch-*/*x* merged prefix is further complicated when combined with certain roots. As described in Section 2.4.1.4, *x-*/*ch-* are lost before coronal fricatives and affricates by a regular phonological process; thus, what would underlyingly (and presumably perhaps also historically) be *x-x-verb* [ASP-3ERG-VERB] could in actuality have any of the following interpretations for roots beginning with a coronal fricative or affricate: *x-x-verb* [INC-3ERG-VERB]; *x-verb* [INC-VERB or 3ERG-VERB], or *Ø-verb* [CMPL-VERB], for any root beginning with *s*, *x*, *tz*, *tz'*, *ch*, and *ch'*: an example is given in (551).

(551) (x-)xitza //x-xitza or (x)-x-xitza//

(INC-)3ERG-know-TV

'he knows it, he knew it'

17 For clarity, third person male subject and object pronouns are used in the glosses but it should be noted that the subject can also be *she* or *it* and the object can also be *her* or *it* without more context making the participants explicit.

6.5 Summary of person marking

It is common for languages with ergative marking to have split ergativity: that is, to have limits on ergative marking. For many languages the ergative alignment is limited to particular aspectual or other grammatical domains whereas nominative-accusative alignment appears in other domains. For instance, some Mayan languages have split ergative alignment where ergative marking occurs in certain aspects or tenses (especially with completive or perfective aspects and past tenses) or in specific constructions, such as for subjects of subordinate clauses. Mopan (of the Yucatecan subgroup), for example, has nominative-accusative alignment in the progressive but ergative alignment in the preterite (Norman and Campbell 1978:140), and Yucatec has accusative alignment in incompletive aspect and ergative alignment in completive aspect and as subjects of subordinate clauses (Bricker 1978:3). Ixil has regular ergative-absolutive marking in most contexts except in 'habitual', which takes nominative-accusative marking (Lyle Campbell, pc). However, Mocho' is the only Mayan language with a split ergative system based on the nominal person hierarchy.

The Mocho' split-ergative system reflects the animacy hierarchy of nominal features. This system of split ergativity according to person, although not unknown cross-linguistically, appears to be unique among the Mayan languages. The split ergativity in Mocho' based on person has implications for the analysis of Proto-Mayan. For example, it is a possibility that the Mocho' system of split ergativity reflects indirectly the sensitivity of Mayan languages to the person hierarchy as considered in Norman and Campbell (1978:146) for Proto-Mayan word order.

The ambiguous structure of *ch-/x-* described in the preceding section clearly

resulted in ambiguity and uncertainty that speakers and hearers had to contend with. It seems that the secondary aspect particles (see Section 9.3.2) were called upon to help compensate for the loss of the ability to signal the completive aspect clearly in cases with third person subjects. Thus, particles such as *ni*= 'already' have been employed to help distinguish aspect; we can say that the language has grammaticalized adverbial *ni*= as part of the aspect system to signal completive status or is moving in that direction. The unique developments of additional features in the Mocho' aspect and voice systems not shared with other Mayan languages are likely due in some part to the need to disambiguate this crucial intersection of aspect and person (cf. Section 9.3: Aspect). For reference, Appendix B contains an overview of the entire person and number marking system of Mocho'.

Table 6.1. Mocho' person affixes

Mocho' Person Affixes						
	Set A			Set B		
	C-	V-	Functions	All Verb Stems	Functions	NonVerbal Predicate
1SG	i:	w ~ i:w	S, A, N	-qin	O	-in
2SG	a:	a:w	S, A, N	-qa:	O	-a:
3SG	x- ~ ch-	ch-	A, N	Ø	S, O	Ø
1PL EXCL[18]	qa-...-o:'	q- ...-o:'	S, A, N	-qo'(o:')	O	-oq
1PL INCL	qa-...-(q)e'	q- ... -(q)e'	S, A, N[19]			
2PL	a:-...-e'	a:w-... -e'	S, A, N	-qix	O	-ix
3PL	x-...-qe'	ch-...-qe'	A, N	-qe	S, O	-e

18 Kaufman (1967) and Martin (1994) have a distinct suffix for first person dual (-o'), but due to variable vowel lengthening in stressed syllables I have not found that distinction reliably perceptible and thus do not include it here.

19 For first person inclusive, S and A have the suffix -qe; N has the suffix -e.

CHAPTER 7

NOUNS AND NOMINAL CONSTRUCTIONS

7.1 Introduction to nouns

This chapter describes nominal morphological processes in Mocho': including nominal possession and noun classes in 7.2.1, inflection for number in 7.2.2, proper nouns in 7.3.1, relational nouns in 7.3.2, nonpersonal pronouns in 7.3.3 (for pronominal person see Chapter 6), numerals in 7.3.4, and nominal phrases in 7.5 including possessive noun phrases that imply existence and predicate nominals. Nominal possessors are indicated by prefixes but all other nominal morphology is suffixing: nouns are composed of a root, any person prefixes and inflectional and derivational suffixes. Most noun roots have a (C)VC structure; some are (C)VCVC, and a few other phonological shapes are found (primarily in loanwords, onomatopoeic forms, and grammaticalized forms; see Section 2.4). The following section describes nominal inflection including possession, noun classes, and number.

7.2 Nominal inflection

7.2.1 Nominal possession and noun classes

All possessed nouns take personal pronominal possessive prefixes from Set A (see Table 6.1). In addition to these prefixes, some classes of nouns have suffixes that are required when they are possessed. Kaufman (1967) distinguishes three classes of nouns, determined by the presence or absence of a suffix when a noun is possessed and the phonological shape of such a suffix. This section proceeds with a description of the three classes of nouns.

Class 1 nouns have no suffix when possessed; most common nouns are members of this class. Some examples of nouns in this class are given in (552) - (558), in unpossessed and possessed (first singular) form.

(552)	bò:x	'tortilla'	i:bò:x	'my tortilla'
(553)	ch'i'	'dog'	i:ch'i'	'my dog'
(554)	a:jal	'work'	wa:jal	'my work'
(555)	be:j	'road'	i:be:j	'my road'
(556)	pò:x	'medicine, cure'	i:pò:x	'my medicine'
(557)	ja'	'water'	i:ja'	'my water'
(558)	ixì:m	'corn'	wi:xì:m	'my corn'

A possessive paradigm for Class 1 nouns is presented in Table 7.1, with the example nouns *a:jal* (vowel-initial) and *mis* (consonant-initial). Note that the forms of *mis* that have a plural number suffix may be long: when possessed, some Class 1 nouns lengthen the root vowel.

In addition to Set A prefixes on a possessed noun, Class 2 and 3 nouns have

suffixes when they are possessed. Class 2 nouns require a disharmonic (high/low) suffix *-V:l* when possessed (see 2.4.2.1.2). When the last vowel in the stem is *a*, the suffix is *-i:l*, for all other vowels (*i, e, o, u*), the suffix is *-a:l*. Class 2 nouns with *o* and *u* in the root were not found. Much more lexical research is needed but it may prove to be the case that roots with these vowels have lexicalized with a harmonic variant *-ul*/*-ol* as may be the case for nouns like *muqul* 'young woman', *cholol* 'toad' *ulul* 'atole drink', which are now unchanged in possessed form.

Examples (559) - (563) show Class 2 nouns in unpossessed and possessed (first person singular) form.

(559) anat	'old woman '	wa:nti:l	'my wife'
(560) icham	'old man'	wichma:l	'my husband'
(561) jab	'year'	i:ja:bi:l	'my years'
(562) jubej	'flower'	i:jubeja:l	'my flowers'
(563) pix	'tomato'	i:pi:xa:l	'my tomatoes'

Following a regular phonological rule, Class 2 nouns (or indeed any nouns that are suffixed) that have contrastive falling pitch lose the pitch contrast when stress is assigned to the final syllable, the possessive suffix (see 2.3.3), as shown in (564) and (565).

(564) tà:nh	'lime' 'cal'
(565) x-ta:nh-i:l	'his lime'

For Class 2 nouns with monosyllabic roots (CVC or VC), the root vowel is usually, but not invariably, lengthened, as shown in (566) - (569).

(566) p**i**x 'tomato' x-p**i:**x-a:l 'his tomato' (3POSS-tomato-POSS)

(567) **i**k' 'chile' ch-**i:**k'-a:l 'her chile' (3POSS-chile-POSS)

(568) j**a**b 'year' x-j**a:**b-i:l 'his age' (3POSS-year-POSS)

(569) q'**a**ch 'earth' qa-q'**a**ch-i:l-o 'their land' (1PL.POSS-earth-POSS-1EXCL)

Some Class 2 nouns that have the root form VCVC lengthen the first root vowel and delete the second vowel when possessed, as in (570).

(570) **a**n**a**t 'old woman' w-**a:**nt-i:l 'my wife' (1SG.POSS-old.woman-POSS)

However, in these forms the disharmonic suffix is selected on the basis of the stem form after vowel deletion: that is, the form of the disharmonic suffix is selected according to the value of the lengthened first vowel, as illustrated in (571).

(571) **i**ch**a**m 'old man' w-**i:**chm-**a:l** 'my husband' (1SG.POSS-old.man-POSS)

According to Kaufman (1967), Class 3 nouns (nouns of expected possession) have a disharmonic suffix of the form -*Vtz* when not possessed. The form of the suffix vowel is in a disharmonic pattern not dissimilar to that found with Class 2 possessive suffix: after (short) *i* the suffix is -*atz*, after *o:* and *ò:* it is -*otz*, elsewhere it is -*itz*, including situations where it follows *ì:* and *i:* (1967:xiii). Kaufman (1967) identifies some forms with Class 3 suffixes but they are extremely rare in the present data.

7.2.2 Nominal inflection for number

Nonhuman nouns are generally not inflected for number in normal speech except for emphasis or disambiguation. Some nouns that refer to humans have distinct plural suffixes; -*taq* and -*etan*. This group of nouns is quite small, and distribution of -*taq* or -*etan* has not been identified as following any phonological pattern. Some examples are provided in (572) - (575).

(572) keremtaq	'los jovenes'	cf. *kerem*	'young man'
(573) i:chamtaq	'old men'	cf. *i:cham*	'old man'
(574) anataq	'old ladies'	cf. *anat*	'old woman'
(575) muqletan	'muchachas'	cf. *muqul*	'muchacha'

7.3 Types of nouns

7.3.1 Proper nouns

Most Mocho' speakers use Spanish names when referring to neighboring towns, but a few speakers remember some geographic names in Mocho', some of which are older borrowings from Spanish. A few examples of names of neighboring towns that were remembered by speakers are included in (576) - (580); several more are contained in Kaufman (1967).

(576) ba:jawe'	Tuzantán
(577) sejrónma	San Geronimo (from Sp.)
(578) ja'e ba'aj	Amatenango (ba'aj is the name of the river in Teco)
(579) cha:xuq	Tolimán (claimed to be from Mocho' *cha'al* and Sp. *jugo*)
(580) xwi:tza:l kampanaj	Campana

Personal names in Mocho' are generally borrowed from Spanish with interesting phonological adaptations; refer to Section 5.5 for more on this topic along with a list of Mocho' personal names.

7.3.2 Relational nouns

Relational nouns are an important class in Mayan languages (and in Mesoamerican languages generally) that serve many of the functions of adpositions (prepositions or postpositions) in other languages, such as showing the position of a noun in relation to another noun. They also serve to clarify or emphasize the roles of core nouns in a given clause. Relational nouns were historically derived from nouns and are composed of a root and an obligatory possessive pronominal prefix. Relational nouns often surface with variable vowel length that seems to be determined in part by intended emphasis and position in the phrase. Some of the more common Mocho' relational nouns are given in Table 7.2; as suggested by Martin (1994a), two forms not identified by Kaufman (1967) as relational nouns are included due to their similarity in function and pattern: *-ì:nh* 'behind back' and *-u'uj* 'for, because of'. Examples (581) – (583) illustrate the use of relational nouns in context.

(581) k-a:-wil-a **a:-baj**

POT-2.SU-see-TV 2SG.POSS-RN.self

'I am going to look at myself'

(582) chk-i:-la:x.a **i:-baj**

INC.PROG-1SG.SU-scratch.TV 1SG.POSS-RN.self

'I'm scratching myself'

(583) mo:cho' **w-itoj**

NEG.exist 1SG.POSS-RN.with

'I don't have a companion'

Although relational nouns have their source in common nouns, some relational

nouns are a recognizable extension of a noun. For example, *chì:nh* (*ch-ì:nh*, 3-RN.midst) has as its source the body part *-ì:nh* 'spine, back': in isolation it is often translated as 'behind' (and occurs with that meaning in context) but it is also used with the meaning of 'in the midst of it, into the center of it', a logical extension, as in (584). Figurative extension of relative nouns is also common, as in (585).

(584) jan x-q-aq'-a'-o:-nach **ch-ì:nh** qa-tu:t-o:'

PRN INC-1PL.SU-give-TR-1EXCL=into 3POSS -RN.midst 1PL-bean

'this we take and toss it in the center of our beans'

(585) saq=ni **ch-ình** we tz'a'al

white=CMPL 3POSS-RN:midst DEF clothes

'the clothes are already clean' (they are clean all through; at their core)

7.3.3 Pronouns

Pronominal person affixes were described in Chapter 6 and shown in Table 6.1. Free-standing personal pronouns as a class do not exist in Mocho': rather, their function is signaled by relational nouns presented in the previous section. The relational noun *-e:t* 'self' is often used in the function traditionally served by free-standing personal pronouns, as *we:t* 'myself, (as for me, I', *awe:t* 'yourself; (as for) you' and *che:t* 'himself; (as for) him', further exemplified in (585) - (587).

(586) ch-aq'-a ti **w-e:t**

INC-give-TV PREP 1SG.POSS-self

'give it to me'

(587) **w-e:t** ch-a:b-i-qin

1SG.POSS-self INC.3ERG-hear-V-1SG.O

'he is listening to me'

(588) la **w-e:t** w-i:k-sa

and 1SG.POSS-self 1SG-carry-CAUS

'I suffered' (Sp. 'yo sufrí')

As seen in examples (586) - (588), the use of relational nouns is not grammatically related to subject or object status. In (587) the relational noun refers to the object, whereas in (588) it refers to the subject. Rather, the role of a relational noun is tied to discourse context and what the speaker wishes to emphasize or focus on. The roles and patterning of relational nouns in Mocho' are in need much further study.

Table 7.3 contains some pronouns found in Mocho' organized by function. In the following sections, the patterns of common Mocho' pronouns are presented, including existential pronouns, deictic pronouns, and interrogative pronouns.

7.3.3.1 Existential pronouns

The pronouns *ja'* and *ji'* are existential and are likely inherently indefinite and nonspecific. The pronoun *ja'* is a general existential and the pronoun *ji'* is locative, essentially meaning 'to exist in a place'. In discourse, these pronouns are often used to introduce new participants. Both *ji'* and *ja'* are inflected for person. Although these pronouns imply existence, they are not existential verbs. For example, they take the person suffixes used on predicate nouns and adjectives (see Table 6.1). Examples (589) and (590) show these pronouns in third person singular and plural uses.

(589) **ji** nach ti i:-k'u'ul

PRN.EXIST.LOC DIR.coming PREP 1SG.POSS-stomach

'it is inside of my stomach'

(590) **ja'-e** we une' mo:cho ch-bi:t-i-qe

PRN.EXIST-PL DEF infant NEG INC-be.sick-IV-3PL

'the babies are not sick'

When occurring with most noun phrases, the existential pronouns are linked with the preposition *ti* (which also links adjectives and nouns) as shown in (591) and (592).

(591) **ji'-o:qo'o:'** ti qa-nhaj-o:'

PRN.LOC-1PL PREP 1PL.POSS-house-1EXCL

'we are in our house'

(592) **ja'e** we tz'ikin k-lo'-o:n-qe i:xì:m

PRN.exist-PL DEF chicken POT-eat-TV-3PL corn

'(the) chickens eat corn' (meaning all chickens generally eat corn)

These existential pronouns in Mocho' are cognate with demonstratives in other Mayan languages. Further research is necessary to determine their exact nature.

7.3.3.2 Deictic pronoun

The pronoun *jan* is used as a deictic pronoun referencing a definite and specific entity; in discourse *jan* is generally used something or someone that has already been introduced, as in (593) and (594).

(593) i:nu'ul jan xbi:j loch

i:-nu'ul **jan** x-bi:j loch

1SG-younger.brother PRN 3POSS-name Ambrosio

'my little brother, his name is Ambrosio'

(594) mo:cho chi:la we mis saq chi:nh, **jan** chi:la we mis q'eq chi:nh

'he didn't see the white cat, the one that he saw was the black cat'

(a) mo:cho ch-i:l-a we mis saq chi:nh

NEG INC.3ERG-see-TV DEF cat white color

(b) **jan** ch-i:l-a we mis q'eq chi:nh

PRN INC.3ERG-see-TV DEF cat black color

7.3.3.3 Interrogative pronouns and question formation

Interrogative pronouns function as to form questions with meanings similar to interrogative pronouns in English such as *who*, *where*, and *how many*. Interrogative pronouns are placed at the beginning of the clause. Several examples of interrogative pronouns in questions are given in (595) - (599).

(595) **q'o** cho:nho tete'

what sell.TV there

'What is he selling there?'

(596) **janik'** animà:l cheq'an i:xì:m klo'o

that animal only corn eat.POT.TV

'That animal eats only corn?

(597) **yo** nhajo:ma we kwa:yuj

where house.AGT.LOC DEF horse

'Where does this horse live?' (lit. 'Where does this horse make his home?'

(598) **k'on** xga:na we alo:m

who like.INC.3ERG DEF animal

'who likes animals?'

(599) **jun** chmajaqe mis tela

what look.for.3ERG cat over.there

'What are those cats looking for over there?'

7.3.4 Numerals

The Mocho' cardinal numerals from one to 20 are shown in Table 7.3. Many speakers do not know the numbers above 18; no speakers remembered the form for 19 and only one speaker was able to remember a form for 20, which is the one given in the chart, and is probably an innovated or calqued form. Martin (n.d.) cites *hu:ne' k'u:hu=tee'* and Kaufman (1967) cites *hun k'u:=te:'* for 'twenty'.

Numerals occur with a suffix *-e* when no other suffix is present. These numerals can occur as quantifying adjectives, as in (600).

(600) jo'e winaq 'five men'

Numerals can be derived into intransitive verbs with the suffix *-i:n*, which is a combination of the verb formative *-i* (see 5.1) and the middle voice suffix (see 9.4.2). Numerals derived with *-i:n* have an existential meaning, as in (601) and (602).

(601)

(602) x-jo'-i-:n-i

INC-five-V-MID-IV

'they were five, there were five of them'

(603) ch-o:x-i-:n-i wi:k'uj xpo:x-i-:n-i

INC-three-V-MID-IV uncultivated.plants INC-medicine-V-MID-IV

'it is three herbs that make up the medicine'

Ordinal numerals take the suffix *-i:l* plus the numeral root. They can also take possessive person prefixes. Ordinal numerals can stand alone as a noun, as in (603) or be used to quantify a following noun, as in (604).

(604) x-kanh-i:l

3POSS-four-N

'the fourth (one)'

(605) ch-ox-i:l i:-k'a:jol

3POSS-three-N 1POSS-child

'my third child'

Ordinal numbers in context are presented in the passage in (605), which provides a typical introduction of several enumerated items in discourse. It is a narrative listing several children, introduced with the existential plural pronoun *ja'e* representing the entire family.

(606) a) ja'e we i:k'ajol xib these def 1SG.child male

b) ju:ne xbi:j wel one 3.name Manuel

c) we junto ole xbi:j def other Olegario 3.name

d) choxi:l i:k'ajol xbi:j lij 3.three.N 1SG.child 3.name Elíjio

e) xkanhi:l i:k'ajol sbi:j mon 3.four.N 1SG.child 3.name Ramón

f) xjo'i:l i:k'ajol xbi:j chì:lo 3.five.N 1SG.child 3.name Esidro

a) 'I have five sons

b) one is named Manuel

c) another is named Olegario

d) my third son is named Elíjio

e) my fourth son is named Ramón

f) my fifth son is named Esidro'

In (605), the first child is then introduced with the numeral *ju:ne'* 'one' in cardinal form; the second child is introduced with the form *ju:nto* 'another' (composed of *ju:ne* 'one' and *toj* 'with'), and the next three children are enumerated with ordinal numbers.

7.4 Noun phrases

7.4.1 Existence and possession

In noun phrases of possession containing two nouns, the possessed item precedes the possessor. In (606), the possessed item has the third person possessive prefix.

(607) ch-i:xì:m i:-tun

3POSS-corn 1SG.POSS-uncle

'my uncle's corn'

Mocho' has no verb meaning "to have"; although the pronouns *ji* and *ja* can be used to state existence (see Section 7.3.3.1); very often existence is expressed only through word order and the implications of possessive prefixes as in (607) and (608), or simply word order, as in (609).

(608) mo:cho' i:-mi:s

NEG 1SG-cat

'I don't have a cat'

(609) x-bi:j i:-mì:m Rosa

3POSS-name 1SG.POSS-mother Rosa

'my mother's name is Rosa'

(610) jwi:s palò:m ti mala:j

many bird PREP coast

'there are many birds at the coast'

(611) cha:j x-nuq

pain 3SG.POSS-throat

'his throat hurts'

7.4.2 Predicate nominals

Nominals (nouns that are the subject of an equation) can function as a predicate, with the same reduced forms of Set B pronominal suffixes that occur on predicate adjectives (see Table 6.1). Examples (611)-(613) show the noun *anat* 'old woman' used as a predicate with singular person inflections.

(612) ana:t-in 'I am an old woman' (old.woman-1SG)

(613) ana:t-a: 'you are an old woman' (old.woman-2SG)

(614) anat 'she is an old woman' (old.woman-3SG)

Relational nouns are often used in conjunction with nouns functioning as predicates: example (614) shows a relational noun with a predicate nominal construction

and (615) shows a relational noun as part of an existential nominal construction.

(615) ch-e:t xi:b

3POSS-self male

'he is a man, he is male'

(616) w-eet we' konex

1SG.POSS-self DEF rabbit

'this rabbit is mine'

7.5 Summary of nouns

Mocho' nouns can be assigned to three classes determined by their behavior when possessed. Most nouns are Class 1 and do not have a possessive suffix; Class 2 nouns have a disharmonic suffix -*V:l* when possessed and Class 3 nouns have a disharmonic suffix -*Vtz* when not possessed. Examples of proper nouns, relational nouns, numerals, and pronouns were presented. Finally, nominal predicates are of two types: predicate nominals serve the function of a copula and are inflected with person suffixes while existential constructions are generally composed of two nouns and understood by the word order of the nouns and the presence of possessive prefixes.

Table 7.1. Class 1 Noun possessive paradigm

Vowel-Initial Roots		Consonant-Initial Roots	
Form	English Gloss	Form	English Gloss
a:jal	'work'	mis	'cat'
w-a:jal	'my work'	i:-mis	'my cat'
a:w-a:jal	'your (sg.) work'	a:-mis	'your (sg.) cat'
ch-a:jal	'his/her work'	x-mis	'his/her cat'
q-a:jal-o:'	'our (EXCL) work'	qa-mi(:)s-o:'	'our (EXCL) cat'
q-a:jal-e	'our (INCL) work'	qa-mi(:)s-e	'our (INCL) cat'
a:w-a:jal-e	'your (pl.) work'	a:-mi(:)s-e	'your (pl.) cat
ch-a:jal-e	'their work'	x-mi(:)s-e	'their cat'

Table 7.2 Mocho' relational nouns

Form	Gloss
-i:to:j	'with; accompanied by'
-e:q'an	'only'
-e:t	'self'
-ibe:l	'under'
-ba:j	'REFLEXIVE'
-ì:nh	'in the midst of; behind'
-u:'uj	'for, because of'

Table 7.3 Common Mocho' pronouns

Pronoun	English Gloss	Function
ja'e	indefinite	Existential
ji'e	indefinite locative	Existential
jan	definite	Deictic Pronoun
ju:ne'	indefinite	General Pronoun
ju:nto	'another'	General Pronoun
janik'	'that'	Interrogative
yo'	'where'	Interrogative
k'on	'who'	Interrogative
jun ~ju	'how, what'	Interrogative
ja:che'	'how many'	Interrogative

Table 7.4 Mocho' numerals

Numeral	English Gloss
ju:n-e	one
ka:b-e	two
o:x-e	three
ka:nh-e	four
jo'-e	five
wajaq-e	six
ju:q-e	seven
waqxaq-e	eight
ba(:)lunh-e	nine
lajunh-e	ten
ju:n=lajunh-e	eleven
ka:b=lajunh-e	twelve
ox=lajunh-e	thirteen
kanh=lajunhe	fourteen
jo'=lajunh-e	fifteen
wajaq=lajunh-e	sixteen
ju:q=lajunh-e	seventeen
waqxaqe=lajunh-e	eighteen
bal=lajunh-e	nineteen (Kaufman 1967)
kaabelajunh-e	twenty

CHAPTER 8

ADJECTIVES

8.1 Introduction

This chapter will present Mocho' adjectives, including root or underived adjectives in Section 8.2 and derived adjectives in Section 8.3. Derived adjectives utilize positional roots and a suffix that is likely related to the middle voice suffix (see Section 9.4)

8.2 Underived adjectives

The class of root or underived adjectives in Mocho' is rather small, as is typical of Mayan languages, and many adjectives may also occur as adverbs or nouns. A representative set of underived adjectives is shown in Table 8.1.

One important adjectival semantic domain is color terms. Color terms follow the grammatical patterns of other underived adjectives. Some color terms in Mocho' are given in (616) - (620).

(617) kyaq 'red'

(618) q'eq 'black'

(619) saq 'white'

(620) chex 'green, blue'

(621) q'an 'yellow'

Adjectives that modify nouns precede the noun and are joined to the noun by the preposition *ti*, as shown in (621) - (623).

(622) man **ti** winaq big PREP man 'big man'

(623) man **ti** q'inh big PREP fiesta 'grand fiesta'

(624) tz'a'ik **ti** ja' hot PREP water 'hot water'

Definite and indefinite markers generally precede the adjective, as illustrated by (624) - (626).

(625) **we** saq ti mis

DEF white PREP cat

'the white cat'

(626) **ju:ne** q'eq ti mis

one black PREP cat

'a black cat'

(627) x-be:j-e-:n-i **we** saq ti mis

INC-road-IV-MID-IV DEF white PREP cat

'the white cat is walking along'

8.3 Derived adjectives

Many adjectives are derived from positional roots (see Section 5.4) with the suffix *-a:n*, which is sometimes reduced to *-an*. Some adjectives derived from positional roots are given in (627) - (630) (positional roots are from Kaufman 1967).

(628) laja:n 'equal' <*laj*- P 'equal, equivalent'

(629) k'echa(:)n 'sitting (in container)' <*kech*- 'sitting in a container'

(630) musa(:)n 'covered, cloudy' <*mus*- 'covered'

(631) tuka:n 'sitting', <*tuk*- 'seated'

The 'adjectival' suffix that derives positional roots is likely related to the middle voice -*:n* suffix (see Section 9.4). Grammatically, this is not inconceivable since many positional roots also occur as transitives with the formative vowel -*a* (see Section 5.4). In addition, words in this form receive the intransitive-marking suffix when they are phrase final or occur before a pause (as is the case with other intransitives derived with middle voice -*:n*, see Section 9.4). In (631) and (632) the derived adjective *laja:n* 'equal' is shown in the middle of a breath group and at the end of the breath group, where it is marked with the (phonological) phrase-final intransitive verb suffix.

(632) mu: ni **laj-a-:n-i**

NEG just equal-TV-MID-IV

'it is not the same now'

(633) mu: ni **laj-a-:n** we tiyè:mpo

NEG just equal-TV-MID DEF time

'it is not the same now these days'

These derived adjectives can function as predicates, but are distinct from verbs in grammatical pattern. For instance, they do not have the same person marking patterns as transitive and intransitive verbs but rather have person pronominal suffixes that are identical to those used for predicate nominals (see Table 6.1), which appear to be

phonologically reduced forms of Set B. Some examples of adjectives with person marking are given in (633) - (635).

(634) we:t **bit-a:n-in**

1SG.POSS-self sick-AJ-1SG

'I am sick'

(635) **laj-a:n-e**

equal-AJ-3PL

'they are not equal'

(636) q-e:t-o:' **tuk-a:n-oqo'o** x-katanh ja'-e jubej

1PL.POSS-self-1EX sitting-AJ-1PL 3POSS-nearby PRN-3PL flower

'we are sitting close by some flowers'

A second distinction between adjectives derived with *-a:n* and verbs derived with *-:n* is that adjectival forms do not take aspectual marking. Consider examples (635) and (636), which contrast an adjectival stem and an intransitive stem from the root *bit-* 'be sick'. (repeated from (531) and (532)).

(637) chk-i:-bi:t-i

INC.PROG-1SG.SU-sick-IV

'I continue to be sick'

(638) bit-a:n-in

sick-AJ-1SG

'I am sick'

When adjectives are employed as predicates the adjective precedes the noun and no preposition is used (in contrast with the use of a preposition when the adjective is a

modifier). The following examples illustrate the adjective 'big' used as a modifier of 'snake' in (638) and as a predicate in (639).

(639) **man** ti ka:n big PREP snake 'big snake'

(640) **man**-Ø we ka:n big-3SG DEF snake 'the snake is big'

As the third person singular suffix for nominal and adjectival predicates is a zero morpheme, the grammatical role of many predicate adjectives referring to third persons is determined by word order and the absence of *ti*, as in (639) above and (640).

(641) w-e:t q'eq-Ø i:-xanhab

1SG.POSS-self black-3SG 1SG.POSS-sandal

'my own sandals are black'

8.4 Summary of adjectives

In summary, although the set of root adjectives is small in Mocho', adjectivals derived from positional roots are widely used. Adjectives that modify nouns must be linked with a preposition while adjectives functioning as predicates are marked for person. Derived adjectives have some grammatical patterns that are different from verbs including the lack of aspect marking and the use of Set B suffixes in reduced form; however, the adjectival derivational suffix is likely related to the middle voice suffix.

Table 8.1 Selected Mocho' root adjectives

Adjective	English Gloss	Additional Uses
jos	'mangy'	
me:ba'	'poor'	
pì:m	'thick, double'	
che:q'an	'only'	
q'a:n	'done'	cf. 'yellow'
chex	'unripe'	cf. 'green'
chì:j	'ripe, mature'	
tz'a'ik	'hot'	also a noun
sì:k	'cold'	also a noun
iti	'small'	also an adverb
wich	'a bit of'	also an adverb
man	big, very	also an adverb

CHAPTER 9

VERBS

9.1 Introduction to verbs

This chapter presents the verb system of Mocho', including some classes of intransitive and transitive verbs in Section 9.2, aspect and mood in Section 9.3, and passive and middle voice in Section 9.4. The systems of aspect and voice in particular have several developments of interest with regard to other Mayan languages.

Most verb roots in Mocho' are (C)VC; some are (C)VCVC, with a few grammaticalized roots having structures such as (C)VCC. Verb roots occur with a stem formative vowel, which marks the verb as transitive or intransitive (see Chapter 7 for a detailed description). Verbs are inflected with prefixes for person and aspect and suffixes for person, number, mood, and voice. The personal pronominal system is described in Chapter 6; the set of person affixes that pertain to verbs is provided in Table 9.1 for reference (note: S = subject of an intransitive, A = agent (subject) of a transitive, O = object of a transitive).

This chapter proceeds as follows: in Section 9.2, important classes of intransitive and transitive verbs are presented, Section 9.3 presents aspect and mood, and Section 9.4 presents passive and middle voice (see Chapter 6 for person and number inflection).

9.2 Verb classes

9.2.1 Intransitive verbs

As described in Section 5.3.1, intransitive verbs occur with the formative vowel *-i* (assimilated to *-e* following roots with *e*). The following is a template for intransitive verb inflectional and derivational affixes:

(ASP) - ASP - SUBJ - Root - FORMATIVE (*-i*) - (MODE) - (PL PERSON)

Some of the most commonly occurring intransitives are verbs of motion. The motion verbs occur widely in discourse: they are frequently used as the first verb in serial or subordinate verb constructions, often occur as auxiliary verbs, and are the source for adverbial directional particles (see Section 10.3). Mocho' verbs of motion are listed in Table 9.2, along with glosses from Martin (1994a).

Some motion verbs are irregular and do not occur with a vowel formative, as can be seen in Table 9.1. Verbs of motion are widely used: one context in that verbs of motion often appear is as the first verb in a serial verb construction, as in the following examples. (Note: if the second verb in the serial construction is subordinate, it will often appear with the middle voice suffix *-(o):n* as in (641) and (642); see Section 9.4.)

(642) qa-cha:w-i-o:' tuku-:n te nok'
1PL.SU-arrive-IV-1EXCL cut-MID there DIR
'we arrived to harvest there'

(643) ni-onh me:su-:n-o
CMP-go-3ABS sweep-MID-IRR
'she went to sweep'

Some intransitive verbs, particularly verbs of motion, can also function as

auxiliary verbs. When used as auxiliaries, verbs are not inflected for person or number and precede a fully inflected verb (however, the use of aspect prefixes may occur; see Martin 1994a). Verbs that occur as auxiliaries may also have an aspectual interpretation, as indicated in the glosses for motion auxiliaries such as *xu'ul* 'came', *xi* 'went', *cha:wi* 'arrived'. Some examples of motion verbs in auxiliary use are given in (643) - (645); see Martin (1994a) for a fuller description of auxiliary verbs in use.

(644) u:li x-maj-a-qin

arrive 3ERG-look.for-TV-1SG.O

'she came to look for me'

(645) xu'ul w-a:l-a

come 1SG.SU-advise-TV

'I came to tell her'

(646) we w-a:l chi x-muqu x-na'

DEF 1SG.POSS-child.of.woman go 3ERG-see 3POSS-older.sister

'my daughter went to see her older sister'

Two important auxiliaries that do not also function as verbs of motion are *bo:wi* 'be able to; begin' (see Martin 1994a for particular details) and *kuri* 'let us [hortative]', shown in (646) - (648). Irrealis marking often co-occurs with *kuri*, as in (646) and (647).

(647) kuri wa'-o

HORT eat-IRR

'let's eat'

(648) kuri loq-o' juune taja:tz

HORT catch-IRR one lizard

'let's go catch a lizard'

(649) bo:wi x-kul-a q'aq'

begin 3ERG-make-TV fire

'he began to make a fire'

9.2.2 Transitive verbs

As described in Section 5.3.1, transitive verbs occur with the formative vowel *-a* for neutral transitives and *-u* for instrumental transitives (assimilated to *-o* following roots with *o*); a handful of roots are exceptions and occur with *-i* as a transitive formative. The following is a template for intransitive verb inflectional and derivational affixes (repeated from Section 1.5):

(ASP) - ASP - SUBJ - Root - FORMATIVE - (VOICE/MODE) - OBJ - (PL PERSON)

One important class of transitive verbs in Mayan languages is that of verbs of eating and drinking (verb stems are restricted according to on the semantic features of the object). In Mocho', *wa'a* means 'to eat food made from corn flour' (usually glossed as 'eat tortillas'), *jobo* means 'to eat soup', *k'uxu* means 'to eat meat and other food that is bitten off to be chewed' (such as corn on a cob), and *lo'o* occurs with other foods including fruit, vegetables, herbs, sauces, and so on. Table 9.3 contains the verbs of eating together with the kinds of objects they can take. The verb *lo'o* appears to be more generic, for everything not indexed with *wa'a* 'eat corn products' and *jobo*'eat soup', as some items occur with both *lo'o* and *k'uxu* or *tzu'u*. However, *wa'a* and *lo'o* do not overlap.

Although the set of Mocho' verbs of eating is not as large or varied as those of other Mayan languages (cf. England 1978 for Mam), a description of this system in Mocho' is perhaps useful as it provides a preliminary basis for comparison with other Mayan languages.

9.3 Aspect and mood

Except for perhaps two optional aspectual particles that convey past and future meaning as well as aspect (see Section 9.3.2), Mocho' does not have morphologically marked tense in the verb phrase; time is inferred from aspectual morphology, temporal adverbs, or other temporal phrases. The aspectual verbal morphology indicates whether the action is complete or incomplete. Aspect marking can be divided into two sets of morphemes: obligatory primary aspect prefixes and secondary aspect clitics.

In addition to these sets of morphemes, glottal stop may also play an aspectual role. Kaufman notes that the presence of a suffixed glottal stop on a transitive stem marks aspects that are not completive (1967:xxi). However, as Martin (1994a) notes, since word-final glottal stop is deleted when it precedes consonant-initial words, this pattern is apparent only in limited contexts and is not represented in the present data. Martin also posited that an initial glottal stop on a vowel-initial intransitive stem (rather, the use of consonant-initial prefixes with vowel-initial stems) occurs when the "interpretation is indisputably past" (1994a:128).

9.3.1 Primary aspect prefixes

Mocho' has a set of "primary aspect" prefixes (Martin 1994a:126) that occur on verbs in combination with aspect clitics and particles. Primary aspect is obligatorily marked (though see the discussion of combinations of aspect and 3rd person markers). The primary aspect prefixes are shown in Table 9.4. The incompletive occurs variably in two phonological forms, *ch-* and *x-* (but with some phonologically-conditioned tendencies; see Section 2.5). In addition, two aspect prefixes *ch-* and *k-* are found in combination, having a distinct meaning that signals a fifth primary aspect. The primary aspect prefixes are described in the following sections.

9.3.1.1 Completive

The lack of an overt aspect prefix (that is, a Ø morpheme) indicates completive aspect, as shown in (649) and (650).

(650) **Ø**-i:-k'ul-a i:-nhaj
CMP-1SG.SU-make-TV 1SG.POSS-house
'I built my house'

(651) i:-mì:m **Ø**-aki-naq ti amatenà:nho
1SG.POSS-mother CMP-IV:come-from.afar PREP Amatenango
'my mother came here from Amatenango'

9.3.1.2 Incompletive

The *ch-/x-* prefix indicates actions or states that are incompletive: that is, events that have not reached an end point. First and second person constructions in

incompletive aspect are straightforward in structure, as illustrated in (651).

(652) **ch**-qa-'onh-o

INC-1PL.S-go-1EXCL

'we went, we were going'

However, as described in Section 6.3, syncretism of several prefix functions with a homophonous (or merged) form of *ch-/x-* poses difficulty in determining whether a given construction in the third person is in completive or incompletive aspect, as in (652) (repeated from (545) above).

(653) **x**-qan-a-qe

3ERG-ask-TV-3PL

'he asked them' or 'they asked him' or 'they asked them'

As described in Section 6.3, the form of the incompletive also poses a problem for interpretation of transitives in the third person, since the incompletive prefix merges with the third person ergative prefix, which is identical in form. This results in the aspect of transitive verbs with an ergative prefix often being interpreted as incompletive when they occur in isolation; it is necessary to disambiguate them by context or other aspect markers. For example, in (653) the grammatical structure allows for an interpretation of either completive or incompletive aspect.

(654) i:-mì:m (Ø-)x-qatza we tò:k

1SG.POSS-mother (CMP-)3ERG-teach DEF talk

'(someone) taught/teaches my mother to speak (Mocho')'

When presented in context, however, (653) is indisputably completive: the speaker is relating her personal history. This sentence occurred when describing her

heritage and the fluency of her parents in Mocho': she is over 70 years of age and her mother is deceased. Background knowledge and context clearly indicate perfective (completive) aspect, so the role of the *x-* prefix can be assigned to the third person ergative marker. However, without contextualization the completive status of x- in (653) is ambiguous. This ambiguity of completive status of prefixes with third person transitives is likely a contributing factor to the development of multiple aspect particles in Mocho'; particularly secondary aspect. Example (654) illustrates a frequently used strategy for indicating completion, the use of the particle *ni* 'already'. In many constructions, *ni* is employed to give context for the action to be interpreted as completed. The role of *ni* as a completive aspect marker is further discussed in Section 9.3.2.

(655) Ø-x-pa'-a=**ni** x-ko:xtal

CMP-3ERG-throw.away-TV=CMP 3POSS-burlap.bag

'he threw out his burlap bag'

9.3.1.3 Potential

The potential prefix *k-* encompasses optative and future and is used in contexts that are possible, desired, potential, future, or hypothetical. The *k-* prefix is generally found with first and second person subjects but has rarely been found with third person, as illustrated in (655).

(656) ja'-e we tz'ikin **k**-lo'-on-qe ixì:m

PRN-3PL DEF chicken **POT**-eat-MID-PL corn

'chickens eat corn'

The correlation between k- and first and second person subjects is likely phonological: first and second person subjects begin with a vowel or *w*-that allow k- to be easily perceived. The placement of k- before a third person ch-/x- creates a complex cluster difficult to pronounce and perceive. The possibility that k- is constrained by phonological rather than grammatical factors is further supported by the fact that distributionally, *k*- does not appear before uvular consonants. One context in that the *k*-aspect prefix is used is to relate future potential action, as in (656) and (657).

(657) **k**-a:w-a:w-a-:n-i

POT-2.SU-shout-TV-MID-IV

'you are going to shout'

(658) **k**-a:-ma:n-a ju:ne a:-tz'ikin

POT-2.su-buy-tv one 2POSS-chicken

'you are going to buy a chicken' or 'go buy a chicken!'

The *k*- prefix was termed potential by Kaufman (1967) to encompass a reference to events that are both hypothetical or optative; *k*- can also be used when describing actions placed temporally in the past that are irrealis; that is, events that did not actually occur or that were not directly experienced by the speaker (however, Mocho' does have a distinct suffix to mark irrealis mood, described in Section 9.3.2). It is very often the aspect marker placed on constructions in response to a question of how to say "x" when "x" was not actually experienced. For example, (658) is placed temporally in the past but is not something that actually occurred; it was given as a response to an elicitation. Since it was an event not experienced by the speaker, it was marked with the *k*- potential prefix.

(659) e:wi:' **k**-i:-chu:nl-a-:n ti i:mì:m

yesterday POT-1SG-dance-TV-MID PREP 1SG.POSS-mother

'yesterday I danced with my mother'.

However, when a definite time period is included, as in (659), the aspect prefix is often changed to the *ch-* incompletive aspect.

(660) ch-eet **ch**-a:wa-:n-i eeqan

3SG-RN.SELF IMPF-shout-MID-IV tomorrow

'he will shout tomorrow'

The potential prefix *k-* is also used to give directions, recommendations, or instructions and to describe expected outcomes, as in the construction in (660), which includes two clauses (a and b).

(661) je:l **k**a:wonh a:we:t ti witz', joyinka **k**a:wonh; moono sa **k**a:potz'i

'if you are going up the hill, you should go slowly; if not you will tire out'

(a) je:l **k**-a:w-'onh a:w-e:t ti witz',

then **POT**-2.su-go 2POSS-self PREP hill

(b) joyinka **k**-a:w-'onh moono sa **k**-a:potz'i

slowly **POT**-2.su-go NEG will **POT**-2.su-tire

9.3.1.4 Imperfect progressive

The incompletive *ch-* and potential *k-* prefixes can be combined to form the imperfect progressive. In common with the potential aspect, the imperfect progressive has primarily been found with first and second person subjects, as in (661) and (662).

(662) **chk**-i:-'onh loq-o:n kach=je pero mo:cho' w-itoj

IMP.PRG-1SG.SU-go catch-MID fish=BGND but NEG 1SG.POSS-companion

'I want to go fishing but I don't have a companion'

(663) **chk**-i:-la:x-o:n-i

INC.PROG-1SG.S-scratch-MID-IV

'I am scratching (something)'

9.3.1.5 Completive punctual

The completive punctual aspect *j-* is used in cases where an action is completed and punctual in nature. Its distribution is not completely clear, as it is used much more rarely than the other aspect prefixes and has not been found in the speech of all consultants. Kaufman (1967) noted its use, but it has appeared in the speech of only two of the oldest of my consultants.

For example, the completive punctual was used for the verb 'kill' in (663) but not the verb 'die' in (664) by the same speaker in the same conversation.

(664) **j**-i:-po:ch'-o we tz'ikin

CMP.PUNCT-1SG.S-kill-TV DEF chicken

'I killed the chicken'

(665) ni **Ø**-ka:m-i we q-i:toj

CMP CMP-die-IV DEF 1PL.POSS-companion

'our companion died'

The punctual completive *j-* may be an older form, now nearly lost (Martin n.d.). The fact that it has only been found in the speech of my two oldest consultants, who are

about ten years older than the next closest in age, would seem to support this suggestion. This form may have been replaced by other combinations of aspect markers used by current speakers. For example, the particle *ni* is often used in conjunction with the completive aspect prefix, as in (664), to indicate or emphasize the completive, perhaps for some speakers supplying the function of the punctual completive prefix. Example (665) is from a second speaker close in age to the speaker cited above, who simply used the completive aspect for the verb 'kill' (responding to the same elicitation given to the first speaker).

(666) **Ø**-i:-po:ch-o i:-kele:m

CMP-1SG.SU-kill-TV 1SG.POSS-rooster

'I killed my rooster'

In fact, the second speaker never used the completive punctual prefix in the contexts of 'kill' or 'die', which might be expected if this aspect were expressing simply completive punctual. However, the second speaker did use completive punctual aspect with the verb 'hit', when it was an event with an end point in the past (as opposed to 'I am hitting you', for example). The contrast between the incompletive and completive punctual are shown in examples (666) (incompletive) and (667) (completive punctual).

(667) **ch**-a:-t'eq-a-qin

INC-2S.SU-hit-TV-1SG.O

'you are hitting me' 7.58

(668) **j-**a:-t'eqa-qin

CMP.PUNCT-2.SU-hit-TV-1SG.O

'you hit me (before)'

Much more data is necessary to confirm a pattern, however. The perfective punctual aspect appears quite rarely; perhaps this indicates that it is highly contextualized and while it is a grammatical option available to the speaker, it is rarely employed and for specific purposes related to an event with an endpoint. A second, not mutually exclusive possibility is that phonological factors have contributed to the decay of this aspect prefix. Further study of the perfective punctual aspect is warranted and necessary.

9.3.2 Secondary aspect

In addition to the obligatory aspect prefixes given above, secondary aspect particles (term from Martin 1998) are also found in Mocho'. Kaufman (1967:xiv) lists several optional secondary aspect particles that are preposed to the primary aspect prefixes. However, although in many instances secondary particles are preposed to primary aspect prefixes, these same particles can also appear following the verb or in other locations throughout the sentence in the present data, as shown in (668) for *jo* 'hypothetical' and in several following examples with *ni* 'completive'.

(669) kuri-**jo** qa-loqo-qe ju:ne taja:tz'

HORT-**HYP** 1PL-catch-1INCL one lizard

'let's go catch a lizard'

Table 9.5 contains secondary aspectual particles identified in the data. This list is preliminary; it is expected that further study will yield more lexical items that serve an aspectual function as well as a better understanding of the placement and grammatical role of secondary aspect particles. For example, much further study is necessary to ascertain whether the positioning of secondary aspect particles correlates with subtle

meaning distinctions. In Table 9.5, alternate phonological forms of aspect particles that have been identified are also included; forms found only in Kaufman are identified with an asterisk.

In addition to the particles found in Table 9.5, Kaufman (1967) also includes *'abi* as a preposed aspectual particle meaning 'past conditional'; however, 'abi appears to have some special conditions of evidentiality that warrant separate treatment so it is included with discourse particles and described in Section 10.7.

The particle *ni* 'already' can occur in the position and function of a secondary aspect proclitic. *Ni* often occurs in conjunction with (or as an indicator of) completive aspect as described in Section 9.3.1 above and shown in example (669).

(670) **ni**=sakwi we une'

CMP=be.born-IV DEF infant

'a baby was born' (Sp. 'ya nació un bebe')

The particle ni can also occur in other positions in a clause. When *ni* occurs at the end of a clause, it signals the completion status of the clause and may have the interpretation of immediate past along with completion. As shown in (670) - (673), *ni* stands in contrast to the clause-final particle *to'* 'still, yet', which indicates a state or incomplete status that is often also progressive in nature.

(671) i:waj ich=**ni'**

1SG.POSS-father old.man=CMP

'my father is already old'

(672) te lo'e:j chi:j=**ni'**

here fruit ripe=CMP

'this fruit is ripe'

(673) i:-nu'ul ch'in=**to'**

1SG.POSS-younger.sibling child=still

'my younger brother is still just a child'

(674) i:waj kere:m=**to'**

1SG.POSS father young.man=still

'my father is still a young man'

Secondary aspect particles combine with primary aspect prefixes to convey subtle aspectual nuances in meaning. Examples (674) - (678) show a sample of differences that are made through the use and combination of primary aspect prefixes and secondary aspect particles for the verb *po:ch'o* 'kill' (note that the third person singular male gloss is generalized: third person arguments could be male, female, or nonhuman). The aspectual elements are indicated in bold, followed by individual and phrasal glosses.

(675) **xi** xpo:ch'o 'went' 'they went to kill him'

(676) **k**i:po:ch'o POT 'I will kill him'

(677) **cha'a** xpo:ch'o PST.CMP 'he is killing him already'

(678) **ni** xpo:ch'oqin CMP 'he has already killed me'

(679) **ni xi** xpo:ch'oqin CMP 'went' 'he has already gone to kill me'

Directionals (see Section 10.3) can also convey aspectual meanings and thus also play a role in the aspectual system. For example, in (679) the directional *chonh* 'going, away from' co-occurs with completive aspect for a progressive completive meaning; for a

more complete description of the role of directionals in conveying aspectual meanings see Martin (1994a).

(680) Ø-i:-k'i:bi **chonh**

CMP-1SG-grow DIR.going

'I was growing up (I kept on growing)' (fuí creciendo)

The aspectual system in Mocho' has several options to convey relative time, completion status, and relative certainty or experience of the speaker regarding events; these aspectual prefixes and particles combine with mood suffixes that are briefly described in the following section.

9.3.3 Mood

Mood is indicated by suffixes on the predicate that directly follow the stem-forming vowel. Important mood suffixes in Mocho' are given in Table 9.6.

The suffix *-j*o (glossed in Kaufman (1967) as 'hypothetical') is used in hortative contexts, with the meaning of “shall we” or “let us” with first person inclusive as shown in (680) (repeated from (666) above)and (681).

(681) kuri-jo qa-loq-o-qe ju:ne taja:tz

HORT-HORT 1PL.SU-catch-TV-1INCL one lizard

'let's go catch a lizard'

(682) k-a:-muq-u-jo we tz'ikin ch-'a:w-a-:n-qe

POT-2.SU-see-TR-HORT DEF chicken INC.3ERG-shout-TV-MID-3PL

'look (sg.) at the squawking chickens'

The imperative suffix is *-anh*, illustrated in (682) and (683). Formative vowels do not co-occur with the imperative.

(683) wach-anh [sleep-IMPV] 'go to sleep!'

(684) wa'-anh [eat-IMPV] 'eat up!'

The imperative suffix is functionally rare: rather, the second person singular and plural affixes are used as a more polite option for the imperative, as in (684) and (685).

(685) tuka:n-qa:

sit-2SG.O

'sit down (sg.)

(686) tuka:n-qix

sit-2PL.O

'sit down (pl.)'

The suffix *-oq*/*-o* indicates irrealis mood, in addition to the logical irrealis interpretation often implied in the use of potential aspect. The irrealis suffix and potential prefix often co-occur, as in (686).

(687) k-i:-onh wa:ch'-o

POT-1SG.SU-go sleep-IRR

'I am going to sleep'

Irrealis is often used with an optative interpretation showing the speaker's wishes or feelings, as in (687).

(688) mu:=ni i:-ga:na-'o we ixoq ya anat=ni

NEG=CMPL 1SG-want-IRR DEF woman because old=CMP

'I don't want/like my wife anymore, because she is old'

Irrealis is not addressed further in this work; for a description of several facets of Mocho' irrealis refer to Martin (1998). The relationship between mode and aspect in Mocho' is beyond the scope of this work but is definitely a topic worthy of further exploration.

9.4 Voice

Mocho' makes great use of the processes of valency reduction in passive and middle voice constructions, which are described in the following sections.

9.4.1 Passive

Mocho' has a passive construction indicated by the suffixes *-j , -x, -ex, -ech*: the latter three are listed by Kaufman but not well represented in the present data. In a passive construction the agent is deleted or marked as oblique by a preceding preposition and the verb is marked as an intransitive verb, as shown in (688) and (689).

(689) i:-po:x-i-j-i

1SG.SU-medicine-IV-PASS-IV

'I was healed'

(690) k-i:-mu:qu-j-i

POT-1SG.SU-see-PASS-IV

'I was seen'

In the examples above, the verb is marked overtly as an intransitive with the intransitive phrase-final suffix *-i*. Any plural person suffixes follow the passive suffix, as in (690).

(691) chk-a:-k'ul-a-j-e molestà:r

INC.PROG-2.SU-make-TR-PASS-3PL bother

'you both are pestered a lot'

An agent that is referenced in a passive construction can be stated if it is in a prepositional phrase, usually with *chu* 'for him' (from the relational noun chu'uj 'for him', see Section 10.5), as in (691).

(692) yo jaq'be-j-i chu we x-kpalej=a

where ask-PASS-IV for DEF 3POSS-male.companion=BGND.LOC

'where/there he was being asked by his companion who had arrived'

There is some evidence of reanalysis on the part of some speakers of the passive suffix (*-j*) as *-ji*, the passive suffix combined with the phrase-final intransitive verb marker (see Section 5.3.1). This is not unlikely, since the passive forms appear with the intransitive marker in many environments, as in (692).

(693) k'aw-sa-j-i

WOUND-CAUS-PASS-IV

'he was wounded'

In (692) above (and in general), the suffix *-i* indicates an intransitive verb and occurs if a verb is phrase-final and has no following suffixes. However, examples (693) and (694) show a pattern that has been found in a few forms: the retention of *-i* before plural person suffixes.

(694) k'aw-sa-ji-qe

wound-CAUS-PASS-3PL

'they were wounded'

(695) qa-k'aw-sa-ji-'o:'

1PL.SU-wound-CAUS-PASS-1EXCL

'we (excl.) were wounded'

The pattern of reanalysis of intransitive phrase-final vowel as part of the preceding morpheme (such as from passive *-j* to *-ji*) has only been found following the passive suffix *-j*. This usage represents an intriguing possibility of reanalysis but much more investigation needs to be done to determine whether it is a widespread pattern.

9.4.2 Middle voice

The reflex of one Proto-Mayan (PM) antipassive suffix is found in Mocho' as *-o:n* and *-:n*; the form *-o:n* occurs on underived monosyllabic transitive verb roots (see 5.3) and *-:n* occurs on transitive roots following the transitive formative suffixes (*-a*, *-u, -i*); the root vowel often also lengthens when the *-(o):n* suffix is added. The suffix in Mocho' that is inherited from the PM antipassive suffix serves a variety of functions, not all of which, however, coincide with the prototypical functions of the antipassive. This section begins with a discussion of the antipassive of Proto-Mayan and modern Mayan languages, then gives a description of the usage of this voice suffix in Mocho', and finally presents a discussion of the unifying features of the occurrences of the suffix that characterize it as middle voice.

9.4.2.1 Antipassive in Mayan languages and Proto-Mayan

Smith-Stark (1978) identifies functions of antipassives found in Mayan languages, which include the absolutive voice, agentive voice, and incorporative voice (176). All

three function to play down or eliminate the logical object of a transitive verb, a core trait of antipassives generally. The absolutive antipassive places the focus on the action of the verb; often there is no patient of transitive verbs mentioned or implied in the absolutive antipassive. The agentive antipassive functions to promote or focus the agent of a transitive verb. The incorporative antipassive is much rarer, found only in a few Mayan languages; it is used whenever the object is incorporated into the verb, with overt indication that the verb is now intransitive in form. Two antipassive suffixes have been reconstructed for Proto-Mayan with the forms *-*(V)w* and *-*(V)n*. Smith-Stark suggests the Proto-Mayan system had absolutive antipassive *-*(V)w* and agentive antipassive *-*(V)n*. In some languages these forms are maintained while in others they have conflated functions or have lost one of the suffixes. However, Mayan languages all have an antipassive in some form.

In Mayan languages generally when the logical object is expressed overtly with an antipassive construction, the object occurs in an oblique phrase with a preposition or relational noun, as in examples (695) - (698) for K'iche' and Q'eqchi' (from Lyle Campbell, field notes). Contrast the neutral transitive K'iche'sentence in (695) with the antipassive sentence in (696) where the logical object 'me' is present in the relational noun:

K'iche'

(696) k-in-u-loq'o-j le: in-ta:t

ASP-1ABS-3ERG-love-TV the my-father

'My father loves me'

(697) k-Ø-loq'o-n le: in-ta:t č-w-e:

ASP-3ABS-love-AP the my-father to-me-to

'My father loves me'

In (695), transitive status is indicated by a transitive suffix on the verb (*-j*) as well as the inclusion of both subject and object prefixes; the first person object 'me' is indicated with an absolutive prefix *in-* and the third person subject 'my father' is indicated with an ergative cross-referencing prefix *u-*. In (696) there is an antipassive suffix on the verb (*-n*), no transitive suffix, and only one argument is indexed on the verb with an absolutive prefix (*Ø-*) indicating the status of the verb as intransitive with a third person subject 'my father'. Another example is seen in Q'eqchi', where, parallel to the K'iche' examples just seen, the neutral transitive sentence of (697) is contrasted with the antipassive sentence of (698) where the logical object, 'the dog' is in an oblique phrase, the relational noun construction, *r-e li tsi'i'*:

Q'eqchi'

(698) x -Ø-x-sak' li ts'i' li kwi:nq

ASP-3ABS-3ERG-hit the dog the man

'the man hit the dog' (neutral/unmarked)

(699) li kwi:nq x-Ø-sak'-ok r-e li ts'i'

the man ASP-3ABS-hit-AP 3POSS-to the dog

'the man hit the dog'

Examples (697) - (698) also illustrate the contrast between active transitive (697) and derived intransitive antipassive constructions (698) found in Mayan languages.

9.4.2.2 Functions of the voice suffix -(o):n

The suffix *-(o):n* in Mocho' occurs with logically transitive constructions that are morphosyntactically intransitive in status; some cases of which seem to be in the functional domain of the antipassive. Examples (699) - (702) illustrate the verb roots *chaj*- 'wash' and *kux*- 'bite' in neutral transitive forms in (699) and (701) and derived intransitive forms as shown in (700) and (702). This common function of *-(o):n*, which is shown in both (700) and (702), fits the description of absolutive antipassive voice found in other Mayan languages in that the form has an overt suffix indicating the antipassive function, the object of the logical transitive is not referenced, and the verb form is morphosyntactically marked as intransitive with the phrase-final suffix *-i*.

ch'aj- 'wash'

(700) ch'a:j-a

wash-TR

'she washed it'

(701) ch'a:j-o:n-i

wash-VOICE-IV

'she is washing it'

k'ux 'bite'

(702) k-i:-k'ux-u i:-ù:x

POT-1SG.su-bite-TV my-meat

'I am going to eat my meat' (lit. 'I will bite my meat')

(703) k'u:x-u-:n-i

bite.TV-VOICE-IV

'it hurts' (lit. 'it bites')

When occurring in simple transitive constructions, the *-(o):n* suffix can function to decrease or downplay the importance of the object, as illustrated by comparing the glosses of the neutral transitive constructions in (699) and (701) to the constructions derived with *-(o):n* in (700) and (702), which have no overt objects. This contrast is also shown in examples (703) and (704), where (703) has the *-(o):n* suffix, is intransitive in form and has no object, while (704) is transitive in form and has as its object the relational noun *i:-baj* 'myself' (literally 'my body').

(704) chk-i:-la:x-o:n-i

INC.PROG-1SG.SU-scratch-VOICE-IV

'I am scratching'

(705) chk-i:-la:x-a i:-baj

ASP-1SG.SU-scratch-TV 1SG-self

'I'm scratching myself'

The *-(o):n* suffix commonly occurs with objects that are indefinite or undifferentiated, as in (705) and (706).

(706) k-lo'-o:n-qe ixì:m

POT-eat-VOICE-PL corn

'they eat corn' ('they are raised on corn' or 'they corn-eat')

(707) te i:-pa:lach a:l=ni ya lo'-o-:n ixì:m

there 1SG.POSS-male.turkey heavy-already because eat-TV-VOICE corn

'my turkey is heavy because of eating corn (corn-eating)'

Examples (705) and (706) also illustrate a pattern of object-marking associated with the *-(o):n* suffix: in Mocho, contrary to the pattern of most Mayan languages, logical objects that occur with verbs with the *-(o):n* suffix are not placed in an oblique phrase. The lack of oblique marking on logical objects occurring with the -(o):n suffix is regular throughout the language, as illustrated by numerous following examples.

The suffix *-(o):n* commonly occurs on verbs that take a mass-noun object, as in (707) and (708).

(708) chal-o:n chiki we' lò:j

offer-VOICE DIR.going DEF ashes

'they were offering out the ashes'

(709) ch-i:k'-o:n-qe=ta si:'

INC-bring-VOICE-3PL=DIR.here wood

'they brought in firewood'

Although *-(o):n* often occurs with an indefinite, unspecified, or mass-noun object, as in (705) - (708), in some cases the object is not indefinite but can be both definite and specific, as in (709) - (711).

(710) jan lo'-o:n we ù:x

PRN eat-VOICE DEF meat

'he ate the meat'

The following example (710) also shows a definite and specific object: in context the object *wa:kax* 'cows' was used in reference to a specific set of cows. The speaker was relating a story about her youth in that some of her family's cows had wandered off and she and her father had gone out looking for their cows.

(711) ch-qa-ma:j-o:n-o:' wa:kax

INC-1PL.SU-look.for-VOICE-1EXCL cow

'we were looking for (those) cows'

In (711), the object *i:nhaj* 'my house' is also definite: it is in possessed form and is clearly a reference to the speaker's home.

(712) chk-i:-me:s-u-:n i:-nhaj

INC.PROG-1SG.SU-sweep-TV-VOICE my-house

'I'm sweeping my house'

The *-(o):n* suffix in Mocho' can appear in sentences with both an overt subject and object, as is shown in (712) and (713).

(713) saq-o:n sè:k we ixoq

wash-VOICE dishes DEF woman

'the woman is washing dishes'

(714) we bu:ruj k-lo'-o:n wi:k'uj

DEF burro POT-eat-VOICE plants

'the burro eats (noncultivated) plants'

When a verb marked with *-(o):n* occurs with both subject and object in the construction, either the subject or the object is often nonspecific, indefinite, or undifferentiated. In (712) and (713) the subjects are definite; in (713) the subject is

focused by being preposed to the verb and is definite. In (712) the object is plural but undifferentiated: it is likely that the woman is washing a specific set of dishes, but the definiteness or specificity is not indicated grammatically. In (713), the object is generic and the construction refers to habitual action. The subject *bu:ruj* 'burro' is definite since the habits of burros were the topic of conversation prior to this utterance, but the actual content of the statement is that the burro (as a class) eats noncultivated plants.

Subordinate verbs in serial verb constructions also appear very often with the *-(o):n* suffix, as shown in (714) - (717).

(715) qa-xi-'o: chunla-:n ti Porvenir
1PL.SU-go-1EXCL dance-VOICE PREP Porvenir
'we went dancing at Porvenir (place name)'

(716) ch-ul-i-qe ma:n-o:n pom
INC-come-IV-3PL sell-VOICE copal
'they came to sell incense'

(717) cha:w-i-qe tuk-u-:n kafe
arrive-IV-3PL cut.TV-VOICE coffee
'they arrived to cut coffee'

(718) x-qatza-qin-qe k-i:-wajb-a-:n we sò:n
INC.3ERG-teach-1SG.O-3PL POT-1SG.SU-play.marimba-TV-VOICE DEF marimba
'they taught me to play the marimba'

As with many main verbs, a transitive subordinate verb can occur without a specified object, as in (718) in that the logical object, 'cotton', is not directly included: it

is expected that the listener will infer that it is cotton that is being harvested through knowledge of local geography and growing seasons.

(719) qa-cha:w-i-o:' tuk-u-:n te nok' ti zò:na tapachù:la
1PL.SU-arrive-IV-1EXCL cut-VOICE there DIR PREP area Tapachula
'we arrived there to cut (cotton) near Tapachula'

The *-(o):n* suffix is also integral to a frequently used strategy for the derivation of verbs from nouns, which is the use of the *-:n* suffix preceded by the *-i* verbal suffix (which is homophonous with the formative suffix for intransitive verb roots, see 5.2). The derived verb form functions as an existential verb with a meaning specific to the root noun and can occur in conjunction with an existential pronoun as in (719) or alone as in (720) and (721). The derived verb form is morphosyntactially intransitive, as is shown by the phrase-final intransitive suffix *-i* on the derived form *po:xi:ni* in (720).

(720) ngaj-i'-:n-qe ja'-e qa-wa:nhable:l-e
house-V-VOICE-3PL PRN-3PL 1-town-3PL
'our countrymen lived there'

(721) chox-i-:n wi:k'uj x-po:x-i-:n-i
three-V-VOICE plants INC-medicine-V-VOICE-IV
'it's three herbs that make up the medicine'

(722) ba'al-i-:n we koxtal
contents-V-VOICE DEF burlap.bag
'the burlap bag is full'

The *-(o):n* suffix can also occur following verbal derivational suffixes. In these cases the resulting construction is generally a stative intransitive. Examples (721) - (723)

show verbs with the *-(o):n* suffix following the transitive derivational suffix *-le* in (722) and the inchoative derivational suffix *-bi* in (723). Logically reflexive forms also sometimes occur with *-(o):n*: as shown in (724), which also has a derivational suffix.

(723) k'anh xk-i:-to:k-le-:n-i

high INC.PROG-1SG-talk-V-VOICE-IV

'my talking is very loud' ('suena mucho mi voz')

(724) ch-ki:b-i-le-:n i:-k'u'ul

INC-get.sweet-IV-TV-voice 1SG.POSS-stomach

'I'm full, I'm satisfied'

(725) x-q'ax-b-i-:n x-ti q'aq'

INC-warm-TV-IV-VOICE 3POSS-mouth fire

'he was warming himself in front of the fire'

The marker *-(o):n* is also found with some verbs indicating motion such as walking or running. However, it is generally found with verbs of motion that are transitive: either those derived from nouns as in (725) or transitives with the instrumental formative suffix *-u*, as in (726). It has not been found with the class of motion intransitives described in Section 9.4.1.

(726) siete mis ch-be:j-e-:n-qe te=la ti pe

seven cat INC-road-IV-VOICE-3PL there=over PREP corral

'seven cats are walking around over there in the corral (seven cats can be found walking in the corral)'

(727) qi:l-u-:n-qe chik'i ti wik'uj (wajaqe kù:k)

run-TV-voice-3PL DIR PREP brush (six squirrels)

'(six squirrels) took off running into the brush'

The verbs of motion found with the -(o):n suffix seem to have a more indirect connotation than the 'classic' motion verbs in Mocho': they may have in common the concept traveling on foot or 'perambulative' (cf. Rice 2000; Axelrod 1993 for Athapaskan languages).

Many instances of the derivation of transitive verb forms with the *-(o):n* suffix appear to be part of a productive process that serves to indicate an event in the perspective of an ongoing process or state. This function of -(o):n falls into the aspectual category of durative, described by Axelrod as referring to “activities that require some duration of time and that have no inherent goal or completion point” (1993:62). Several examples of forms derived in this manner are given in Table 9.7.

The derivation of transitive verbs with *-(o):n* serves to make the construction less transitive than a comparative neutral transitive form, functionally suppressing the nominal arguments and emphasizing the predicate. In addition to indicating temporal duration of an activity (particularly when relating past actions in discourse), the interpretation of the activity in these constructions can be generic or habitual. Examples (727) and (728) illustrate this contrast in meaning with the verb *elq'a* 'steal': the construction derived with *-(o):n* in (727) has the implication that the stealing is habitual and durative as compared with the underived transitive in (728).

(728) we winaq ch-'e:lq'-a-:n-i

DEF man INC-steal-TV-voice-IV

'the man is robbing' (as a lifestyle)

(729) ch-'e:lq'-a x-ta'inh we ixoq

INC.3ERG-steal-TV her-money DEF woman

'he is stealing the woman's money' (right now)

The interpretation of duration is clear in discourse. For example, in the passage in (728) from a story about the adventures of two friends, the verbs that occur with the *-o:n* suffix imply the passage of time or duration of the activity; in this case, buying and selling.

A correlation between noncompletive aspect and verbs with the *-(o):n* suffix is also illustrated in the preceding discourse passage in (729), where the incompletive progressive aspect is found in (c) and incompletive aspect is found in (g). In (729)(f), the incompletive suffix *ch-* is phonologically indistinguishable from the root-initial *ch*.

(730) (a) mo:cho' kwaq'a kabe ariyal 'I won't give two reales'

mo:cho' k-w-aq'-a kabe a:-riyal [she said]

NEG POT-1SG.SU-give-TV two your-real

(b) ka:pa'a kene' te la 'throw it out over there'

k-a:-pa'-a kene te=la

POT-2.SU-throw-TV stay there=over

(c) mo:cho' **xki:ma:no:ni** we:t lò:j 'I'm not **buying** ashes'

mo:cho' xk-i:-ma:n-o:n-i w-e:t lò:j

NEG INC.PROG-1SG.SU-buy-VOICE-IV 1SG.POSS-self ashes

(d) tene la' onh poxo' 'so he went again'

tene la' Ø-onh poxo'

then and CMP-go again

(e) ta la nong poxo' 'he came again'

ta la ni-Ø-onh poxo'

here and CMP-CMP-go again

(f) **chalo:n** chiki we lò:j 'he was **offering** out the ashes' [for sale]'

chal-o:n chiki we lò:j

offer-VOICE out DEF ashes

(g) mo:k'o:yo **chma:no:ni'** 'nobody was **buying** '

mo:=k'o:yo ch-ma:n-o:n-i

NEG=DUB INC-buy-VOICE-IV

The verbs for buying and selling that occur in (729) with the *-(o):n* suffix can also occur without it. The passage in (730a) - (f), from the same story, illustrates the use of the *-(o):n* suffix to indicate duration and genericness; in this case, the neutral transitive verb *man-* means 'buy' while the forms with the *-(o):n* suffix have the meaning of 'shopping'. The *-(o):n* suffix is often found with the irrealis mode suffix (*-o*), as shown in (730c) and (d).

(731) (a) cho **ki:ma:na** 'so I'm going to buy [something]'

cho k-i:-ma:n-a [he said]

because.of.this POT-1SG.su-buy-TV

(b) o:ki noq 'he went in there'

o:k-i=noq

enter-IV=there

(c) **ma:no:no'** 'he shopped'

ma:n-o:n-o'

buy-voice-IRR

(d) **ma:no:no'** we ti tiyè:nda 'he shopped in that store'

ma:n-o:n-o' we ti tiyè:nda

buy-voice-IRR DEF PREP store

(e) chila noq ju:ne q'ò:j 'he saw a mask there'

ch-il-a=noq ju:ne q'ò:j

3ERG-see-TV=there one mask

(f) **xma:na** te'e:l 'he bought it from there'

x-ma:n-a te'e:l

3ERG-buy-TV from.there

Forms derived with *-(o):n* also include potentially punctual events, such as hitting and spitting: however, when occurring with the *-(o):n* suffix the derived forms have a repetitive interpretation, as in (731) for *t'eq-* 'hit, pound'.

(732) k-i:-t'eq-o:n-i

POT-1SG.SU-hit-VOICE-IV

'I pounded him, I was hitting him'

Punctual events may have an interpretation that is both repetitive and habitual, as in (732) for *tzub-* 'spit'.

(733) tzu:b-a-:n-i (we tzu:b-o:m)

spit-TV-VOICE-IV (DEF spit-AGT.N)

'it spits (the scorpion)' (lit. 'the spitter spits', *tzu:bo:m* refers to scorpion)

Finally, in some cases the *-(o):n* suffix functions to convey a different meaning than that carried in corresponding neutral transitive stems. In these cases, the meaning of the form derived with *-(o):n* is related to the core meaning of the verb, but often reflects an emphasis on the action or process of the verb. Examples of a shift in meaning through the use of *-(o):n* are given in (732) and (733). In (733), the interpretation of 'care for' is derived with *-(o):n* from the neutral transitive root *i:l-* 'see', which is shown for comparison in (734).

(734) jan ch'-i:l-o:n-i ja'e ch'in

PRN INC-see-VOICE-IV those child

'she is caring for the children'

(735) ch-i:l-a=nok ju:ne q'ò:j

3ERG-see-TV=DIR.inward one mask

'he saw a mask there'

In summary, there are several situations in that the voice suffix *-(o):n* is used in Mocho'. Verbs with *-(o):n* are formally intransitive. Some forms derived with *-(o):n* occur without objects, having a pattern that falls under the traditional antipassive function found in other Mayan languages (the absolutive voice). However, the fact that the *-(o):n* suffix can also occur with overt objects that are not placed in an oblique phrase is counter to the traditional antipassive structure. Objects occurring with *-(o):n* may be definite or specific and both subject and object nominals may be present; however, one of the core

nominals is often indefinite or nonspecific. Verbs derived with *-(o):n* are often durative, habitual, repetitive, generic, or have a shift in meaning that emphasizes the action or process of the verb in some way. In discourse, forms derived with *-(o):n* can be completive, incompletive, or irrealis; most forms correlate with incompletive aspect. Discourse functions of *-(o):n* are to emphasize the verb as an ongoing event or process and are often durative or generic.

9.4.2.3 Discussion of uses of the *-(o):n* suffix

As stated above, the pattern of the *-(o):n* suffix in Mocho' is distinct from the pattern of antipassive marking in other Mayan languages, having some functions that do not fall under the traditional domain of antipassive. First, common uses in Mocho' include a correlation with incompletive aspect or meanings including habitual, repetitive, or generalized action, as is found in many preceding examples. The *-(o):n* suffix appears rarely in conjunction with the completive aspect; when it does make a rare appearance in the completive, it usually indicates that an event or activity takes place over a period of time, has low telicity, or is nonpunctual. Example (735) (repeated from (726) above) shows a rare occurrence of the *-(o):n* suffix with completive aspect in an event of running that is nonpunctual in that it describes an event that takes place over time and atelic since it has no stated endpoint.

(736) qi:l-u-:n-qe chik'i ti wik'uj (wajaqe kù:k)
run-TV-voice-3PL DIR.going PREP brush (six squirrels)
'(six squirrels) took off running into the brush'

Second, Mocho' allows the presence of both an object and a subject with a verb

marked with *-(o):n*; although in many cases either the object or subject is generic or indefinite (though definite objects are also found with *-(o):n,* as shown above). This pattern of the Mocho' voice suffix *-(o):n* in particular contrasts with that found for antipassive constructions in other Mayan languages and is a strong indication that the antipassive marker inherited from PM has been extended to other functions in Mocho'. The standard definition of antipassive involves the demotion of the logical object that, if present in the clause, is then marked as noncore by case or an adposition and is no longer a core argument of the verb (see, e.g., Dixon 1994:168; Norman and Campbell 1978; Polinsky 2005). As described in 9.4.2.1, other Mayan languages require the logical object of an antipassive construction (if the language permits overt expression of it in the clause) to be in an oblique phrase, with noncore status signaled by a relational noun or preposition. In Mocho', in contrast, an object of a verb that has the *-(o):n* suffix can occur without an overt indication of demotion, as was shown in several examples above.

The antipassive is a formal way of transforming a transitive construction into an intransitive one through the demotion of the patient, functionally detransitivizing a logically transitive construction. In Mocho', the *-(o):n* suffix does not always correlate with patient demotion, but its uses do have a common thread of lower transitivity than prototypically transitive constructions. Many of the uses of middle voice correlate with items that are low on the scale of transitivity proposed by Hopper and Thompson (1980); both middle voice marking and low transitivity can include events that are nonaction, atelic, nonpunctual, irrealis, or that have an O that is not individuated. Thus, the *-(o):n* suffix does not conforming exclusively to the antipassive and marks reduced transitivity. Its use is broader than the antipassive and coincides with the domain of middle voice.

In her seminal work on middle voice, Kemmer (1994) identifies several functions of middle voice marking and relates middle voice to the property of low "relative elaboration of events," a semantic property that includes the functional downplaying of both subjects and objects and emphasis on situations. Kemmer (1994:3) identifies the middle voice as as a semantic category "intermediate in transitivity," situated between one participant (intransitive) and two-participant (transitive) events.

Middle marking functions to "signal a departure from the canonical transitive event type in the direction of an intransitive event type along [the] specific semantic parameters" (209. In comparing a sample of languages cross-linguistically, Kemmer found middle marking to correlate with morphosyntactically intransitive marking (1994: 210). As shown in numerous examples, the verbs marked with the *-(o):n* suffix, which I propose marks middle voice in Mocho', are formally intransitive. This intransitive marking is maintained even when verbs that have the *-(o):n* suffix occur with two core arguments.

Kemmer identified middle voice in semantic categories cross-linguistically that are also found in Mocho'; these include semantic classes such as grooming and body care, naturally reciprocal events, nontranslational motion and change in body posture, translational motion, emotion, and cognition. Functions subsumed in these categories that are also commonly marked in Mocho' with the middle voice include genericness and habitualness. Rice (2000) identified several related domains of middle marking in Athabaskan languages; those found in Mocho' include perambulatory and repetitive.

9.4.2.3.1 Reciprocal

The naturally reciprocal verb *chunl-* 'dance' occurs commonly in the middle voice, and may occur perhaps exclusively in middle voice.

(737) qa-chunl-a-:n-o:'

1PL-dance-TV-MID-1EXCL

'we were dancing; shall we dance?'

(738) chunl-a-:n-qe we wi:naq

dance-TV-MID-3PL DEF man

'the people danced'

The verb *mi:k-* 'converse with' was also found with middle voice marking, as shown in (738).

(739) mu mere x-mi:k'-o:n-i

NEG very INC-converse.with-MID-IV

'she doesn't converse with others, she doesn’t have relations with others'

9.4.2.3.2 Nontranslational motion and change in body posture

Most constructions of nontranslational motion (motion that involves moving the body without moving position) and change in body posture in Mocho' are composed of positional roots derived as adjectives, often in combination with directionals if motion is implied. When derived as adjectives, positional roots have endings similar to middle marking and a stative meaning. The 'adjective' ending *-a:n* is homophonous in form with the transitive formative *-a* combined with the middle voice suffix *-:n*. It is possible that

'adjectives' derived from positional roots are in fact positional roots derived as transitives with the middle voice suffix. Some examples are given in (738) - (741).

(740) bit-a:n 'be sick'

(741) tuk-a:n 'sitting'

(742) mus-a:n 'covered, cloudy'

(743) kech-a:n 'sitting in a container'

A few transitive verbs of translational motion are found with middle voice marking in Mocho', as shown in (725) above for 'walk' and (726) for 'run'; these may carry an implication of perambulatory.

9.4.2.3.3 Emotion and cognition

A convergence of emotion and cognition middle marking occurs with the verb *bi:s-* 'think about', which has the meaning of 'be sad' when it is marked with the middle voice suffix, as shown in (742).

(744) bi:s-u-:n-i

think-TV-MID-IV

'he was sad'

Emotions are also found with middle marking, as in (744) for 'scare'. When they occur with middle marking, verbs of emotion have a durative interpretation, as shown in the contrast between the neutral transitive construction in (744) and the middle construction in (745).

(745) i:-xibt-a'

1SG-scare-TV

'I scared him

(746) k-i:-xibt-a-:n-i

POT-1SG-scare-TV-MID-IV

'I am scaring (e.g., I am going around scaring people)'

9.4.2.3.4 Genericness

Generic events are often found in middle voice in Mocho'. The following examples show genericness in meaning; either of the event or of the object. Example (746) (repeated from (733) above) shows the action of *seeing* being made generic; with middle marking it has the meaning of 'care for', not necessarily to see a specific object.

(747) jan ch'-i:l-o:n-i ja'-e ch'in

PRN INC-see-VOICE-IV PRN-PL child

'she is caring for the children'

Other instances of genericness conveyed by middle marking include (712) and (703) above for 'wash' and 'scratch', respectively. Such constructions also have a repetitive durative interpretation if permitted by the semantics of the verb.

9.4.2.3.5 Habitualness

Examples that illustrate middle voice constructions with habitual interpretations include (732) for 'spit', (705) and (706) for 'eat corn', and (713) for 'eat plants'.

9.4.2.3.6 Repetitive

Naturally punctual verbs that are derived with middle voice have a habitual meaning as in (732) or a repetitive meaning as shown in the (747) (repeated from (731)).

(748) k-i:-t'eq-o:n-i
POT-1SG.SU-hit-VOICE-IV
'I pounded him, I was hitting him'

9.4.2.4 Summary of middle voice

In summary, the properties of durative and incompletive aspects were proposed as significant in Mocho' middle marking. This is in line with the atelic and nonpunctual aspects of low transitivity noted by Hopper and Thompson and the broader pattern of *low elaboration of events* described by Kemmer. Several domains of middle marking that have been identified cross-linguistically are also found with middle marking in Mocho', including reciprocal, nontranslational motion and change in body position, emotion and cognition, genericness, habitualness, and repetitive.

9.4.2.4.1 Aspectual correlations with middle voice

Kemmer (1994) notes some areas that are in need of further investigation in relation to middle voice; these include 'aspectual correlations or distinctions' (1994:245) that have been shown to be of great importance in Mocho' middle marking. The strong correlation of Mocho' *-(o):n* with incompletive aspect is therefore of interest and relevance in examining patterns of middle-voice marking cross-linguistically and merits further study. Mocho' *-(o):n* has a strong correlation with habitual action, generic events, progressive and incompletive; this is logical when considering the properties inherent in

low elaboration of events and low transitivity, as recognized by Kemmer: "[g]eneric events, being nonspecific and nonindividuated, are lower in elaboration than specific events" (1994:148).

9.4.2.4.2 Implications of shift to middle voice

Mocho' middle voice has the PM antipassive as its origin. The development of middle voice marking in Mocho' from an antipassive suffix is important in the context of other Mayan languages and also has an impact on the understanding of the potential sources of middle marking cross-linguistically.

First, as was stated above, antipassive constructions are typically associated with ergative languages. The reduced ergative-absolutive morphological system in Mocho' in comparison to the ergative marking of other Mayan languages and of PM may be responsible for the shift in the function of the PM antipassive to include other functions in Mocho' not generally associated with antipassives. For example, the PM antipassive, Mocho' middle voice, has taken on some of the function of aspect, since the *-o:n/-:n* suffix generally functions to signal incompletive or irrealis in verbs in the third person. This change is likely due to the homophony of the prefixes for incompletive aspect and third person transitive objects, both *ch-*/*x-*, making them ambiguous. The determination of whether incompletive aspect is involved is more difficult due to prefix homophony; thus, it is advantageous to be able to call upon the *-o:n/-:n* suffix to help clarify incompletive aspect.

Second, the historical source of the middle marker in Mocho' is clearly a PM antipassive suffix. This is significant because it is one of the few documented cases where the middle marker did not develop from a reflexive, the usual origin of middle marking affixes (cf. Kemmer 1994; Thompson 1996). Although Kemmer mentions that some middle markers may have arisen from passives, antipassive marking has not yet been proposed as a significant source for middle marking: thus, the shift in Mocho' to middle voice and the clear source of the middle marking as the PM antipassive is of great importance in the area of language typology and grammatical change.

9.5 Summary of verbs

Verbs in Mocho' have several features of interest. The aspect system has several aspectual particles serving the function of primary and secondary aspect. Prefix syncretism of the homophonous third person ergative and incompletive aspect prefixes has resulted in ambiguity in the aspect system. Thus, supporting aspectual particles are commonly used for disambiguation of completive and incompletive aspect.

Regarding the voice system, Mocho' has passive and middle voice constructions: middle voice marking is productive and correlates with incompletive aspect. Middle voice in Mocho' serves to emphasize the event and de-emphasize the nominal arguments and often occurs with events or processes that are durative, generic, or habitual. The Mocho' middle voice suffix *-(o):n* is a cognate with one of the antipassive suffixes found in Mayan languages and developed from Proto-Mayan antipassive. The shift in Mocho' to middle voice is of interest in Mayan, but is also significant as it provides evidence for a

toward the broader understanding of middle voice marking typologically and evidence for a new diachronic source for middle marking, the antipassive.

Table 9.1 Verbal person affixes

	Set A (Prefixes)			Set B (Suffixes)	
	C-	V-	Functions	Verb Stem	Functions
1SG	i:	w ~ i:w	S, A, N	-qin	O
2SG	a:	a:w	S, A, N	-qa:	O
3SG	x- ~ ch-	ch-	A, N	Ø	S, O
1EXCL[20]	qa-...-o:'	q- ...-o:'	S, A, N	-qo'(o:')	O
1INCL	qa-...-qe'	q- ... -qe'	S, A, N		
2PL	a:-...-e'	a:w-... -e'	S, A, N	-qix	O
3PL	x-...-qe'	ch-...-qe'	A, N	-qe	S, O

20 Kaufman (1967) and Martin (1994) have a distinct suffix for first person dual (-o'), but due to variable vowel lengthening in stressed syllables I have not found that distinction reliably perceptible and thus do not include it here.

Table 9.2 Mocho' motion intransitive verbs

Mocho'	Formative	English Gloss (from Martin 1994a)
'a:ch-	-i	'descend'
'ak-	-i	'come (from afar)'
ma:q-	-i	'ascend'
cha:w-	-i	'arrive'
e:l-	-i	'leave'
i(:)k-	-i	'pass (by)'
ken-	-e	'stay'
onh	-Ø	'go (off)'
o:k-	-i	'enter'
xi	-Ø	'go (to a place)'
xu'u:l	-Ø	'come (to a place)'
meltz'-	-i	'return (to a place)'
u:l-	-i	'arrive (to a place)'

Table 9.3 Mocho' verbs of eating

Verb	Gloss	Objects
jobo	eat soup	*kà:ldo* 'soup, stew' (<*Sp. caldo*)
lo'o	eat (general)'	*alanxa:x* 'orange'(<*Sp.*), *tù:t* 'beans', *wi:k'uj* 'herbs', *kù:m* 'calabaza squash', *pà:q* 'green bean', *sebò:ya* 'onion' (<*Sp. cebolla*), *i:s* 'potato', *q'ojoq'* 'chilacayote squash', *cha:l pì:x* 'tomato salsa', *papà:ya* (<*Sp. papaya*), *dù:lse* 'candy' (<*Sp. dulce*), *ù:x* 'meat', *mò:le* 'mole sauce' (<*Sp.*)
wa'a	'eat (corn products)'	*bò:x* 'corn tortilla', *ch'à:w* 'tamale', *empanà:da* 'empanada' (<*Sp.*), *panh* 'bread' (<*Sp.*)
uk'a	drink	*ja'* 'water', *ulu:l* 'atole drink', *kafe* 'coffee' (<*Sp.*)
k'uxu	bite, eat meat	*ù:x* 'beef', *baq'ech* 'meat', *kach* 'fish'
tzu'u	suck	*palè:ta* 'lollipop' (<*Sp. paleta*), *dù:lse* 'lollipop' (<*Sp. dulce*), *map* 'koyol'

Table 9.4 Primary aspect prefixes

Prefix	Abbreviation	Gloss
Ø	CMP	completive
j-	CMP.PUNCT	completive punctual
ch- ~ x-	INC	incompletive
k-	POT	potential (imperfect)
ch-+k-	INC.PROG	incompletive progressive

Table 9.5. Secondary aspect particles

Particle	Gloss
tza(:) ~ sa	definite future
chaq'a ~ cha'a ~ xa ~ cha	progressive
xi ~ chi	past progressive (also an auxiliary)
ni	completive
=to	still, yet
jo ~ o	hortative, hypothetical
ko*	conditional (from Kaufman 1967)

Table 9.6 Mood suffixes

Suffix	English Gloss
-jo, -o	hortative (also a particle)
-o, -	irrealis
-a:nh	imperative
-wo	optative (TK)
-qix	imperative plural
-qa:	imperative singular

Table 9.7 Derived verbs with meanings of a process, state, or ongoing event

Derived Form (3rd completive)	Gloss	Root	Transitive Formative
ju:bu:n	plowing	ju:b-	-u
le:nhu:n	making tortillas	lenh-	-u
elq'a:n	robbing, stealing	elq'-	-a
a:wa:n	shouting	a:w-	-a
bi:ta:n	singing	bi:t-	-a
tza:qu:n	(first) grinding of corn	tza:q-	-u
nok'o:n	(third) grinding of corn	nok'-	-o
ch'a:jo:n	washing	ch'aj-	-a
saqo:n	washing	saq-	-a
chonho:n	selling	chonh-	-o
k'ula:n	making	k'ul-	-a
majo:n	looking for	maj-	-a

CHAPTER 10

ADVERBIALS AND PARTICLES

10.1 Introduction to adverbials and particles

Mocho' has a rich system of discourse particles, adverbs, and adverbial particles. This chapter presents some of the adverbials and particles found in Mocho', but much more research in this area is necessary. Root adverbs are presented in Section 10.2, directionals are presented in Section 10.3, quantifiers and definiteness are introduced in Section 10.4, prepositions are presented in Section 10.5, negatives are presented in Section 10.6, the reportative particle is introduced in Section 10.7, and backgrounding particles are presented in Section 10.8.

10.2 Root adverbs

The class of adverbs is relatively small, as many adverbial functions are filled by directionals and relational nouns. Some adverbs also function as adjectives. Several common adverbs are given in (748) - (759).

(749) chek'an 'only'

(750) e:qan 'tomorrow'

(751) e:wii 'yesterday'

(752) jwis 'very'

(753) mar 'very'

(754) pè:na 'barely, with difficulty'

(755) po:xo' 'again'

(756) saqlaaj 'early'

(757) te 'here'

(758) najat 'far away'

(759) ch'an 'slowly'

(760) joyinhka 'slowly'

The adverbs *mar* 'very' and *pè:na* 'with difficulty', are loans from Spanish: they are regularly used and are incorporated into Mocho'; an example is given in (760).

(761) mar ì:s-a

very lazy.person-2SG

'you are a very lazy person'

Adverbs precede the adjectives, verbs, or adverbs they modify but cannot occur between a subject that has been preposed for focus and a verb, as illustrated in (761).

(762) ch'an we ka:n be:j-e:n-i

slowly DEF snake road-V-MID-IV

'the snake was slowly crawling', cf. *we ka:n chan be:je:ni (ungrammatical)

An important class of adverbials is composed of directional particles, which are described in Section 10.3.

10.3 Directionals

Directionals are particles expressing direction, manner of motion, and distance, many of which were derived from verbs of motion. Directionals may be found in many syntactic positions but most often directly follow a verb to which they cliticize and express the direction or manner of the predicate. Many of them occur with variable vowel length: they are likely short and lengthened for affect or when phrase-final. Martin (1994a) is an important reference on this topic, and provides a good overview of Mocho' directional particles.

Kaufman lists several directionals in Mocho' defined as having figurative or literal meanings (1967:xvii). Based on function and use, Martin (1994a) builds on Kaufman's analysis, distinguishing three categories of postverbal directional particles, including trajectory particles, perspective-orienting particles, and directional aspect particles. A list of directionals based on Martin's analysis (1994a) is given in Table 10.1.

One additional lexical item that is similar to directionals listed above is found in the data: *k'o* 'over there (to the side)'. Although it is not frequent, speakers felt it belonged to the same category as the other directionals listed in Table 10.1 and had a definite idea as to the meaning of this particle (Sp. '*de aquel lado cerquita*; *aquí atrasito*'). Examples of directionals in context are are given in (762) -(764).

(763) w-aq'-a=ma:q i:-sà:m

1SG.SU-put-TV=DIR.upward 1POSS-tortilla.griddle

'I get out my tortilla griddle' ('comal'; put it up on the table to make tortillas)

(764) k-w-o:k-i=no:k

POT-1SG.SU-enter-IV=DIR.inward

'I'm going to go in there (through the doorway)'

(765) k-a:w-aq'-a=nonh i:-ba'al

POT-2.SU-give-TV=DIR.going.off 1SG.POSS-food

'you should send me my lunch out there'

When not immediately following a verb, directionals commonly occur in a phrase with *te* 'there' or *te la '*over there', as illustrated in (765)-(768). *Te la* implies a greater distance than the use of *te* alone.

(766) te nok 'up there' 'allá arriba'

(767) te la nok 'over up there' 'hasta allá arriba'

(768) te neel 'down there' 'allá abajo'

(769) te la neel 'down over there' 'hasta allá abajo'

Directionals provide context for manner and motion, and provide for the distinguishing of fine-grained differences, as is shown in (769)-(771) with the intransitive inchoative stem *je:tbi* 'come nearer to, scoot'.

(770) je:tbi=nok 'he scooted toward the middle (e.g., of a bench)'

(771) je:tbi=te'e:l 'he scooted over (toward the edge, away from the speaker)'

(772) je:tbi=ta 'he scooted closer (right next to the speaker)'

The directional *ta* 'directly here' (glossed by Martin 1994a as 'coming or bringing along (toward here)') is very frequent, as in (772) and (773). Although the original source of the directional particle is unknown, it is an intriguing possibility that the directional may be the source for a verbal suffix *-ta* that is now grammaticalized with certain roots.

Examples (774) and (775) have stems formed with this grammaticalized suffix.

(773) mu: ch-'e:l=ta

NEG 3ERG-leave=DIR.directly.here

'he didn't go out (from here)'

(774) meltz'-i=ta abi'

return-IV=DIR.directly.here REP

'he returned, so they say'

(775) xibta-qin

scare-1SG.O

'he scared me'

(776) x-kolta-qin-qe

INC.3ERG-help-1SG.O-3PL

'they are helping me'

The cardinal directions are nominalized forms of directionals, shown in (776) – (778). In addition, other directionals can be nominalized with the derivational suffix -*ela:l* to form a locative noun, as in (779).

(777) ok'elaal 'north'

(778) elelaal 'south'

(779) ik'elaal 'east, west' (to the side)[21]

(780) maqela:l [a place] down there a bit, but not far

Directionals are an important class of particles in Mocho', as they are frequently used for indicating direction, distance, and manner of motion, among other functions.

21 There were likely distinct terms for 'east' and 'west' in Mocho', but none of the consultants were able to recall distinct terms. Further research may reveal separate terms for 'east' and 'west'.

10.4 Quantifiers and definiteness

The words that can be used as quantifiers and determiners in Mocho' are briefly described in the following section. Quantifiers and definite markers precede the nouns they modify. Important quantifiers and definite markers are identified in (780)-(783).

(781) we DEF

(782) iti DIM

(783) ju:nto 'another'

(784) ju:ne 'one' (also *ju:n-o* 'one-IRR'; see Martin 1998)

Definiteness and indefiniteness are conveyed in many ways in Mocho'. The use of the definite marker *we* is very common, and indicates that a noun phrase is definite, as in (784).

(785) loko **we** kone:x

caught DEF rabbit

'he caught the rabbit'

There are indications that while Mocho' marks definiteness and indefiniteness, there is not necessarily a class of articles. For example, although we is a marker of definiteness, it can modify a noun phrase. If the definite marker *we* occurs with a preposition, it precedes both the preposition and noun.

(786) ma:n-o:n-o' we ti tiyè:nda

buy-MID-IRR DEF PREP store

'he went shopping in the store'

The combination of the pronoun *jan* (also *janh*) with *we* conveys both definiteness and specificity, as in (786).

(787) jan we tù:t

one DEF bean

'one specific bean, that specific bean'

The numeral *ju:ne* can be used as a determiner to indicate first mention; it is often used to introduce someone or something into the discourse. Both *ju:ne* and *we'* can co-occur, as in (787) and (788). However, the use of *ju:ne* is not identical to that of *we* as it is not required if a noun phrase is indefinite.

(788) ki:to:kle ti ju:ne 'a:bi:n

1SG.POT.recount PREP one story

'I'm going to tell a tale'

(789) we ju:ne wi:naq y ju:ne xkpa:lej

DEF one man and one 3POSS-companion

'One man had a companion'

The phrase *ju:ne toj* 'one with' has lexicalized as a quantifier *ju:nto* meaning 'another', illustrated in (789)

(790) **ju:nto** tz'a'ik

another day

the other day, the next day'

Numerals can also be used as quantifiers; numerals directly precede the nouns they modify and have the numeral suffix *-e*, as shown in (790).

(791) **ka:b-e** pa:lach k-lo'o-qe i:xì:m

two-NUM male.turkey POT-eat-3PL corn

'two male turkeys will be eating corn'

10.5 Prepositions

The class of prepositions includes the preposition *ti* and two words that function as prepositions that clearly were derived from relational nouns (see Section 7.3.2): *to'* (also *toj*) from *ch-i:toj* '3POSS-with and *chu* from *ch-u'u:j* '3POSS-for'.

The preposition *ti* has a broad function in Mocho', and is employed for a variety of oblique uses including the indication of location, time phrases, and noncore arguments of the verb. Locational and temporal uses of *ti* are illustrated in (791) - (792).

(792) qa-xi-'o: chunla-:n ti Porvenir

1PL-go-1EXCL dance-AP PREP Porvenir

'we went dancing in Porvenir (place name)'

(793) we so:tz' chqi:lu:ni ti' aqbal

DEF bat flies PREP noche

'the bat flies around at night'

Some adjectives must be followed by *ti* to modify nouns as shown in (793) and (794), and *ti* is a potential source for part of the form of the diminutive adjectival proclitic *iti*, shown in (795).

(794) man ti winaq 'big man' (big PREP man)

(795) man ti q'inh 'grand fiesta' (big PREP fiesta)

(796) iti wich 'a little bit' (DIM little)

The prepositional use of *chu* illustrated in (796) and (797)occurs with the meaning of 'because of' or 'for', clearly related to the relational noun *ch-u'uj* 'by him, for him' in third person possessed form.

(797) a:w-aq'-a-:n-i **chu** i:jubej

2SG.SU-give-TV-mid-IV for 1SG.POSS-flowers

'thank you for the flowers' (lit. 'you give of my flowers'; *a:waq'a:ni* has a lexicalized meaning of 'thank you')

A logical subject of a passive construction is placed in an oblique phrase with *chu*, as illustrated in (797).

(798) yo jaq'be-j-i **chu** we x-kpalej=a

where ask-PASS-IV for DEF 3-male.companion=BGND.LOC

'where/there he was being asked by his companion who had arrived there'

The preposition *toj* (also *to'*) has the meaning of 'with'; it is from the relational noun *-i:toj* 'with, accompanied by'; it is shown in (798) and (799). Two prepositions can co-occur, as in (800).

(799) **to'** ta:j 'with ocote'

(800) po:x-om-in **toj** wi:k'uj

medicine-AGT.N-1SG with herbs

'I am a natural doctor' (lit., I am a doctor with herbs)

(801) la teneje' **toj** **ti** i:-ta'i:nh=je k-(i:)-onh ma:n-a

and then with PREP 1SG.POSS-money=BGND POT-1SG-go buy-TV

and with my money I'm going to go buy something

10.6 Negative particles

Negative elements in Mocho' are particles or proclitics, sometimes occurring in combination with the backgrounding locative particle *=a'* (see 10.7). The inventory of

negative or dubitative particles is shown in Table 10.2. Several examples of negative and conditional constructions are given in (801) - (810).

(802) **ma**=ch-'onh ti tz'i:b-om

INDF=INC-go PREP write-AGT

'perhaps he is going to be one who writes'

(803) **ba**=ma:na a:-pò:x

DUB-buy.TR 2-medicine

'you should buy yourself some medicine'

(804) **ba**'=a:w-ik'.a=ta k'e:jan

DUB=2SG.SU-carry-TV=directly.here much

'why didn't you bring a lot?'

(805) **mo:**cho' i:-mi:s

NEG 1SG.POSS-cat

I don't have a cat'

(806) **mo:cho'** w-e:t

NEG 1SG.POSS-self

'I don't have one, I don't have anything'

(807) w-e:t **mo:cho** ma'an

1SG.POSS-self NEG INDF

'as for me, no' (as a response to a yes/no question)

(808) **mo:no** sa k-a:-potzi'

NEG.COND DEF.FUT POT-2SG.SU-tire.IV

'if not, you will tire yourself out'

(809) je:l **mu:**-qa-kam-i-qe cho wa'inh=a

then NEG-1PL-die-IV-3PL for hunger=BGND

'well if we are not all going to die from hunger'

(810) **mo=to'** ch-bo:w.i'

NEG=yet INC-finish

'he hasn't yet finished'

(811) we kuch **mu**=ni chuk'a chu ja'

DEF pig NEG=CMPL INC.3ERG-drink-TV at water

the pig hasn't yet drunk his water

10.7 Reportative particle

Mocho' has two clearly related reportative evidential particles *abi'* and *bi'*, which were derived from the verb *a:bi* and are commonly translated as “they say”. These particles contain the implication that the speaker did not directly witness or participate in the event being reported; they occur in multiple genres including narrative, conversation, traditional texts, and oral histories. Example (811) illustrates a common use of the reportative particle.

(812) meltz-i=ta **abi**

return-IV=directly.here REP

'he came back, so they say'

In (812), the reportative particle has an attached backgrounding clitic, which serves to reduce the emphasis on the reported nature of the story. For this particular instance, this was made clear in the transcription process, as the Mocho' consultant

provided a Spanish gloss for the sentence, and then added “dice” (they say) as an afterthought, after a pause and request for repetition.

(813) k-i:-to:k-le lo ke **bi**=je ch-a:k.i-len=ta' tiyè:mpo

POT-1SG.SU-talk-V that which REP=BGND INC-come-N=directly.here time

'I'm going to recount how (it is said) they came here at the beginning'

The function of the reportative evidential particle goes beyond the evidential realm, however. For example, there are instances where one of these particles indicates indefiniteness or lack of specificity, as in both clauses of (813), where the reportative particles have a meaning of “perhaps”.

(814) jan xqaq'a'o: nach chì:nh qatu:to: **bi'** jan xqalo'o: **bi'**

'this we would put into the beans and this is what we would eat, perhaps'

(a) jan x-q-aq'a'-oo=nach ch-ì:nh qa-tuut-oo **bi'**

PRN INC.3ERG-1PL-give.TR-1excl=DIR.into 3-midst 1PL-bean-1excl INDF

(b) jan x-qa-lo'o **bi'**

PRN INC.3ERG-1PL-eat.TR INDF

Example (813) comes from a text in that the speaker was giving examples of the kind of food she would cook and serve in her house. She was relating one of her family recipes, but since it was a hypothetical situation, the grammatical devices of reportative particles and potential aspect were used to signal the potential and indefinite status of the narration.

10.8 Backgrounding particles

Mocho' has two particles that cliticize to the preceding word and indicate that a particular argument or phrase is considered by the speaker as background information or less topical. The enclitic *=a'*, shown in (814), is locative and indexes an argument, phrase, or clause as background with reference to a place and *=je* identifies something as background to the discourse (untopical), shown in (815) (repeated from (800)).

(815) yo x-qa-k'ula-:n-o=**a**

where INC-1PL.SU-do-MID-1EXCL=BGND.LOC

'where we did that'

(816) la teneje' toj ti i:-ta'i:nh=je k-(i:)-onh ma:n-a

and then with PREP 1SG.POSS-money=BGND POT-1SG-go buy-TV

'and with my money I'm going to go buy something'

In (815), the phrase *toj ti i:-ta'i:nh* 'with my money' is marked with the background particle *=je* as background information to the rest of the utterance. The background clitics *=a* and *=je* have a large functional load in discourse: they are extremely frequent and serve to index the speaker's judgment of focus and background information. Examples (816) and (817) contrast how *=je* and *=a* can be applied to similar lexical items (both have the root *nhaj* 'house') to have similar meanings in isolation but different interpretations in context, as shown in (818), the context from that examples (816) and (817) were taken.

(817) xnhaji:n=a 'in his house' [*x-nhaj-i-:n=a* 3-house-IV-MID=BGND.LOC]

(818) ti xnhaj=je 'in his house' [*ti x-nhaj=je* PREP 3-house-BGND.TOP]

(819) we palach ti **xnhaj=je** i:kpalej **xnhaji:n=a**

'the male turkey is in his home, at my friend's house'

10.9 Summary of adverbs and particles

Adverbials and particles serve several functions in Mocho'. One important class of adverbials is directionals, originally derived from intransitive motion verbs, that indicate manner of motion, direction, and distance and convey subtle nuances in meanings. Mocho' has three prepositions, two of which are descended from relational nouns. With regard to negative constructions, Mocho' has an array of negative proclitics that convey dubitative, negative, and conditional meanings. Other discourse particles such as reportative and backgrounding clitics function to convey the mindset of the speaker with regard to evidentiality and topicality, respectively.

Table 10.1 Directional particles (based on Martin 1994a)

Category	Mocho' Form	English Gloss
Trajectory particles (DIR1)	no:nh	going off or taking away (from here)
	ta:	coming or bringing along (toward here)
	u:l	returning
	kene'	leaving in place
	cha:w	arriving
Perspective-orienting particles (DIR2)	e:l ~ ne:l ~ te'e:l	outward; outside
	o:k ~ no:k ~ to'o:k	inward; inside
	a:ch ~ na:ch ~ ta'a:ch	downward
	ma:q ~ kama:q ~ tama:q	upward
Directional Aspect Particles	cho:nh	going
	chaki	coming
	chik'i	passing by
	che:li	going out

Table 10.2 Negative affixes and proclitics

Mocho'	Grammatical Function	English Gloss
ma'an ~ma=	dubitative, indefinite	'who knows, perhaps'
ba'=	dubitative conditional	'if, should'
mo:cho'	negative clause	'no, not'
mu:= ... =a'	negative predicate or argument	'no, not'
mo:no	negative conditional	'if not'
mo'=to'	negative progressive incomplete	'not yet'
mu(:) + ni'	negative incompletive	'not yet (complete)'

CONCLUSION

This dissertation has presented several grammatical facets of the Mocho' language. Mocho' is of interest for several reasons and deserves much further study. Many of the developments in Mocho' grammar are of interest typologically as well as contributing to historical topics in Mayan and greater understanding of Mayan languages in general. The moribund status of the language means the documentation and description of Mocho' is an even more pressing issue.

Phonological features of interest include the development of contrastive tone and an interaction between tone and the pattern of borrowing of Spanish loanwords. In the grammatical system, Mocho' has split ergativity unique among the Mayan languages in that ergativity is marked only for third persons. The homophony of the incompletive aspect prefix and the third person ergative prefix have resulted in ambiguity of aspect in transitive constructions, and several particles are employed to signal aspectual distinctions. Mocho' does not have an antipassive; instead, a suffix reconstructed as antipassive in Proto-Mayan is used for middle voice. Several word classes are used in conjunction in Mocho' to convey manner of motion, direction, and position, including directionals, relational nouns, and derived positional roots. In addition, several discourse particles including reportative and backgrounding clitics convey a speaker's judgment of topicality and importance.

APPENDIX A

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APPENDIX B

OVERVIEW OF MOCHO' PERSONAL PRONOMINAL AFFIXES

Person	Number		Stem type	Affixes	Roles
First	Singular		Consonant-initial	i:-	N; A; S
			Vowel-initial	i:w-, w-	
			All	-qin	O
			All	-in	NV
	Plural	Inclusive	Consonant-initial	qa- -o(:)'	N; A; S
			Vowel-initial	q- -o(:)'	
		Exclusive	Consonant-initial	qa- -qe	
			Vowel-initial	q- -qe	
		Inclusive Exclusive	All	-qo	O
		Inclusive Exclusive	All	-o(:)'	NV
Second	Singular		Consonant-initial	a:-	N; A; S
			Vowel-initial	a:w-	
			All	-qa:	O
			All	-a:	NV
	Plural		Consonant-initial	a: -e	N; A; S
			Vowel-initial	a:w -e	
			All	-qix	O
			All	-ix	NV
Third	Singular		All	x-, ch-	N; A
				Ø	S; O; NV
	Plural		All	x-, ch- -qe	N
				x-, ch- -e	A
				-qe	S; O
				-e	NV

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