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Aspects and arguments of the Lachirioag Zapotec verb

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by

Elizabeth Solá-Llonch

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ABSTRACT OF THE THESIS

Aspects and arguments of the Lachirioag Zapotec verb

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Elizabeth Solá-Llonch

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Professor William Harold Torrence, Jr., Chair

This thesis investigates the verbal morphology of Lachirioag Zapotec, a Northern Zapotec language from the town of San Cristóbal Lachirioag in Oaxaca, Mexico. There are two parts of the verbal morphology that are the focus of this thesis, the TAM prefixes and the argument enclitics. There are two kinds of TAM prefix: primary prefixes, which are obligatory, and secondary prefixes, which are not. The first part of the thesis centers around the primary prefixes and their use, with a focus on the allomorphy exhibited by the perfective and irrealis prefixes. The second part of the thesis discusses the secondary prefixes and the information that they convey. Finally, the third part focuses on the argument enclitics and plural marker, specifically on their distribution and cooccurrence restrictions.

The thesis of Elizabeth Solá-Llonch is approved.

Pamela Munro

Ethan J. Poole

William Harold Torrence, Jr., Committee Chair

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AND	Andative
ANIM	Animate
CAUS	Causative
COMIT	Comitative
CONT	Continuative
DIMIN	Diminutive
DOUBT	Dubitative
EMPH	Emphatic
EXCL	Exclusive
FOR	Formal
INAN	Inanimate
INCL	Inclusive
INFOR	Informal
IRR/G	Irrealis; *g*- allomorph
IRR/WA	Irrealis; *w(á)*- allomorph
MID	Middle passive
NEG	Negation
NEUT	Neutral
PERF/B	Perfective; *b*- allomorph
PERF/GU	Perfective; *gu*- allomorph
PL	Plural
PRO	Pronominal base
Q	Question particle
REP	Repetitive
SG	Singular
VEN	Venitive

CHAPTER 1

Introduction

This thesis aims to describe the verbal morphology in San Cristóbal Lachirioag Zapotec, which will be referred to as Lachirioag Zapotec or SCLZ hereinafter. The thesis will focus on the leftmost part of the verb, on the Tense-Aspect-Mood prefixes; and on the rightmost part of the verb, on the plural marking and argument clitics.

The current chapter serves as an introduction to the Lachirioag Zapotec language and its grammar. Section 1.1 introduces the Lachirioag Zapotec language and its community and section 1.2 describes the previous linguistic work on Lachirioag Zapotec and other closely related languages. Section 1.3 gives a brief description of the phonology of the language and the orthography used in this thesis. A basic grammatical description is provided in section 1.4: general word order is described in 1.4.1 and an overview of verbal morphology is given in 1.4.2. Section 1.5 presents a few notes on the glossing and translations given for the Lachirioag Zapotec data. An outline of the entire thesis is given in section 1.6.

1.1   Language background

The town of San Cristóbal Lachirioag is located in the district of Villa Alta in the state of Oaxaca, Mexico. Like many towns in Oaxaca, its official name is formed from the name of a Christian saint (here, St. Christopher) followed by a Spanish approximation of the native Zapotec place name; *Lachirioag* comes from the SCLZ name *Lash Djiagh* 'rocky plain/valley'. In Spanish, it is pronounced *Lachiróa*. Lachirioag Zapotec is the language native to this town.

Zapotec languages are part of the Otomanguean language family; all surviving Otomanguean

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languages (between 176-220 in number) are spoken in southwestern Mexico (Baerman et al. 2019). Estimates of the number of Zapotec languages range between five (Kaufman 1983) to around sixty (Baerman et al. 2019). In general, they are divided into five main branches: northern, eastern, western, southern, and central. Northern Zapotec languages are further divided into five dialect groups - Lhe'ja, Xidza, Xan, Welhab, and Xhon - based on mutual intelligibility, of which Lachirioag Zapotec is classified as a member of the Xhon group (Castellanos Martinez 1995). Speakers from the Xidza, Xan, and Xhon groups are able to communicate with each other if necessary, but only at a basic level, and within a single dialect group there is both phonological and syntactic diversity (see Sonnenschein (2004) and Teodocio Olivares (2009) for detailed discussion). According to my consultants, there are two endonyms used for Lachirioag Zapotec: *xidja* and *xhon*, which likely correspond to the Xidza and Xhon groups described above. *Xidja* is still understood by everyone but is mainly used by older speakers to refer to the Zapotec identity, while *xhon* is a newer term that has become more widely adopted. It is possible that this switch in terminology corresponds with the production of Castellanos Martinez (1995), which is a Spanish-Zapotec dictionary compiled by speakers of Xhon Zapotec.

The Mexican government agency INALI reports 450,431 Zapotec speakers registered in the 2010 census (Embriz Osorio and Zamora Alarcón 2012), though the census does not distinguish between different Zapotec varieties. INEGI (2021) puts the population of the town of Lachirioag at 1,342, 82.93% of which speak an indigenous language. Most of the indigenous languages spoken in the town are Zapotec (97.5%; around 1,085 Zapotec speakers), though this number likely includes multiple varieties of Zapotec besides SCLZ. According to my consultants, there is migration to Lachirioag of speakers of other Zapotec languages, and generally speakers of different Zapotec varieties will default to Spanish when communicating with each other. My consultants estimate that only the older generation (250-500 people) in Lachirioag speak solely Zapotec; the majority of the SCLZ community are bilingual in Spanish. There is also a community of SCLZ speakers in California, mainly in Los Angeles and the Bay Area. About fifty of the SCLZ speakers in California are fully fluent, but there are an additional 60-100 people who are partially so. About 10% of the fully fluent

speakers in California are solely monolingual in SCLZ; these are mainly elders who were the first to migrate to the US in the 1960s or 70s and have younger family members who are able to translate to Spanish or English for them if necessary. Due to the discrimination against indigenous people and the socio-economic pressure to learn a country's prestige language (Spanish in Mexico and English in the US), most children in Lachirioag and California are not fluent in SCLZ. However, there is a movement within the community to revitalize their language by having classes for students to learn about the language and their culture. While many parents of the older generations did not teach their children SCLZ because they wanted them to learn Spanish (or English), my consultants say that many younger parents in both Lachirioag and California are encouraging their children to take the SCLZ classes and to engage with the language.

I have worked with four SCLZ consultants: Julio Dominguez (30s,M), Lucina Miguel (40s,F), Minerva Mendez (50s,F), and Mauricia Ambrosio (50s,F). All four are fluent in SCLZ and Spanish, with Julio Dominguez and Minerva Mendez fluent in English as well. Lucina Miguel lives in Oaxaca, while the rest are part of the Los Angeles community; all four report that they regularly use SCLZ in their daily life. Most of the data presented in this thesis was collected from Lucina Miguel and Julio Dominguez via structured elicitation sessions over Zoom.

According to Lucina Miguel, there are three subdialects of SCLZ spoken in the the town of Lachirioag. One is spoken in the northern part of the town, another in the central part, and the third in the southern part. While I am unsure which of these three groups each of my consultants belongs to, my consultants can be divided into two dialectal categories based upon two points of divergence: three of my consultants have the *ré'r* form of the 2PL independent pronoun (see ch. 4) and have a uvularized vowel at the end of words like *yiágh* 'flower' (see ch. 1.3); and one consultant has the *ré'* form of the 2PL independent pronoun and replaces word final [aʁ] with [o] in words like *yió* 'flower'. Where distinction between the two dialects is necessary, the first is called SCLZ-A and the second SCLZ-O.

1.2 Previous linguistic work

I am not aware of any formal linguistic documentation of Lachirioag Zapotec prior to the 2020 UCLA Field Methods class. This two-quarter class culminated with the SCLZ Field Methods Mini-Conference, and several of the presentations from the mini-conference were also given at the 2021 SSILA conference (Booth 2021; Booth et al. 2021; Liu 2021; Solá-Llonch 2021a) and the 2021 CLS conference (Solá-Llonch 2021b, submitted).[1]

There are efforts within the community of Lachirioag Zapotec speakers to document and preserve their language. There is a booklet translating time-related words from SCLZ into Spanish (Ruiz Molina et al. n.d.), a small manual that gives lists of common words and phrases including greetings, colors, family members, etc. (Vilma n.d.), and another manual with legal and medical terms (Ambrosio n.d.). Two of my consultants, Lucina Mendez and Julio Dominguez, are involved in organizing an online class on SCLZ for children from the community.

Work on other Northern Zapotec languages includes Butler's (1980) grammar of Yatzachi Zapotec; López and Newberg's (1990) work on verbal morphology and conjugation and Avelino Becerra's (2004) dissertation on the grammar and phonetics of Yalálag Zapotec; Long and Cruz's (1990) dictionary and Sonnenschein's (2004) dissertation on the grammar of Zoogocho Zapotec; Teodocio Olivares's (2009) Master's thesis on the phonology of Betaza Zapotec; Foreman's (2006) dissertation on the grammar of Macuiltianguis Zapotec; and Tejada's (2012) dissertation on grammatical tone in Sierra Juárez (Atepec) Zapotec; among many others. Macuiltianguis and Atepec Zapotec are classified as Northwestern Zapotec languages and are more distantly related to the rest of the Northern Zapotec languages. Throughout this thesis, I bring in these sources when relevant. All translations of the Spanish-language texts are my own.

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[1]There is also ongoing work by the linguist Michael Galant from California State University, Dominguez Hills to create an SCLZ dictionary.

1.3 Phonological description and orthography

Table 1.1 below gives the consonant inventory as it is currently understood for SCLZ. When there is a mismatch between the orthographic and IPA symbol, the IPA symbol is given to the right in square brackets. Symbols marked with a star ($\star$) represent sounds found mainly in (Spanish) loanwords.[2]

	Labial	Alveolar	Postalveolar	Palatoalveolar	Velar	Labiovelar	Glottal
Plosive	p b	t d			k g	kw[kʷ]	'[ʔ]
Nasal	m*	nn[nː] n		ñ[ɲ]*			
Affricate				ch[ʧ] dj[ʤ]			
Trill		rr[r]*					
Tap		r[ɾ]					
Fricative	f*	s z	x[ʂ] xh[ʐ]	sh[ʃ] zh[ʒ]	j[x]*		
Lateral		l[lː]					
Approximant				y[j]		w	

Table 1.1: Lachirioag Zapotec consonants

The places of articulation in table 1.1 come from Avelino Becerra's (2004) work on the closely related language of Yalálag Zapotec. His detailed acoustic analysis found that the consonants traditionally analyzed as retroflex in Zapotec (in SCLZ: *x* and *xh*) are most often produced with the upper part of the tongue tip at the post-avleolar region, and only one speaker articulated them with the lower part of the tongue as is typical of retroflex consonants. He also found that the alveolar obstruents vary between dental and alveolar articulation, and that the affricates are frequently produced as either palato-alveolar or palatal.

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[2]This orthography was developed by Pamela Munro and Julio Dominguez with the goal that it can be used by the community in LA, which contains members who may be less familiar with the Spanish-based orthography proposed by Ambrosio (n.d.) for use by the community in Mexico. In Ambrosio's (n.d.) orthography, the letter *h* is written after a fortis symbol to represent the lenis counterpart: *chh* instead of *dj*, *n* instead of *nn*, *nh* instead of *n*, and *lh* instead of *r*. The exception is the palatoalveolar fricative pair, where the lenis consonant is written as *ll* (not *shh*) because this consonant is pronounced similarly to the Spanish consonant *ll* (in Oaxacan Spanish).

Descriptions of Zapotec languages traditionally divide the consonants into fortis (historically geminate) and lenis (historically singleton) consonant classes (Avelino Becerra 2004; Leander 2008). The fortis/lenis consonant pairs in SCLZ are given in table 1.2:

Lenis:	b	d	g	dj	z	xh	zh	n	r
Fortis:	p,kw	t	k	ch	s	x	sh	nn	l

Table 1.2: Fortis/lenis consonant pairs

Longer duration is the primary characteristic distinguishing fortis consonants from lenis consonants in Yateé Zapotec (Jaeger 1983) and San Francisco Ozolotepec Zapotec (Leander 2008). Additionally, fortis obstruents are always voiceless and fortis stops and affricates are always produced with full closure, while lenis obstruents are variably voiced and lenis stops and affricates are often spirantized (Leander 2008; Teodocio Olivares 2009). Ongoing work with Lily Xu on SCLZ supports past findings that duration is the most reliable characteristic of the fortis/lenis contrast in Zapotec languages.[3]

The lenis alveolar nasal /n/ has many variants including [r̃ ŋ m]. The [ɾ] realization of the lenis counterpart to /lː/ is very prevalent in the speech of my younger consultants, but my older consultants often produce a short [l] or a lateral tap in place of [ɾ]. The lenis velar stop /g/ is pronounced as [j] or [gʲ] before front vowels, an alternation characteristic of Northern Zapotec languages (Operstein and Sonnenschein 2015). The labiovelar stop [kʷ] is often written as *ku* rather than *kw* when it occurs word-finally or before a consonant, due to the preference of my consultants. Fortis stops (save /kʷ/) rarely appear word-initially in native words; /t/ and /k/ only appear initially in a few function words (e.g., *to* 'one' and *ka* 'like, as'), while /p/ never does, though it may occur as an onset (e.g., *rà'apa'* 'hat') or coda (e.g., *nnep* 'step, rung') word-internally or -finally.

There are six vowel qualities: [i e a o u] and a reduced central vowel often pronounced as [ə] or [ɨ] that occurs in unstressed syllables or as an epenthetic vowel. This last vowel is

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[3]The results of an acoustic study of consonants in Lachirioag Zapotec will be presented as a talk at the upcoming 2022 SSILA conference.

written as *ë*, and the rest using their IPA symbols. SCLZ also exhibits nonmodal phonation and contrastive tone. Although the nonmodal phonation is still being investigated, there is likely only one type of contrastive nonmodal phonation on vowels that is variably realized as creaky voice, as a glottal stop, or as the "rearticulated vowel" found in many Otomanguean languages (Teodocio Olivares 2009; Sonnenschein 2004). The nonmodal vowels are written with an apostrophe between two identical vowels (e.g., *a'a*) or with an apostrophe after a single vowel (e.g., *a'*), depending on how the word was produced when the sentence was elicited.

The exact tonemes in SCLZ are still being investigated as well, though preliminary investigation suggests that four tones are found on modal monosyllabic words: high, low, rising and falling (1).[4] The interaction, if any, between tone and nonmodal phonation is still unknown.

(1) Low: *nnez*   'street'

    High: *nnép*   'step, rung'

    Rising: *ză*   'beans'

    Falling: *bêl*   'fish'

There is a uvular fricative that occurs in the closely related languages of Betaza, Zoogocho, and Yalálag Zapotec. It is analyzed as a distinct phoneme in Zoogocho and Betaza Zapotec (Sonnenschein 2004; Teodocio Olivares 2009) and as a word-final allophone of lenis /g/ in Yalálag Zapotec (Avelino Becerra 2004). Avelino Becerra (2004) points out that most instances of the uvular in Yalálag Zapotec come from multimorphemic compounds in Proto-Zapotec and that modern speakers variably pronounce the uvular fricative as [χ] or [g]. In Lachirioag Zapotec, this segment occurs in two main ways: as a very low and back [ɑ] for SCLZ-A speakers or [o] for SCLZ-O speakers (2).

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[4]Since our understanding of the tone in Lachirioag Zapotec is not complete, and much of the data presented here was collected before we even knew this much, tone is only marked sporadically throughout the data presented in this thesis.

(2) Examples of the uvular sound in Lachiroag Zapotec

		SCLZ-A	*SCLZ-O*
a.	'star'	[bêrɑ�]	[bêro]
b.	'stone'	[jiːɑ�]	[jiːo]

For my consultants who speak SCLZ-A, the pronunciation of the vowel [ɑ] involves a very low F2 and a relatively high F1, causing the F1 and F2 formants to pinch together in a way characteristic uvular sounds. This is very similar to the phenomenon of uvular vowels described in the Sino-Tibetan language Qiang (Evans et al. 2016), which is why I analyze the uvular sound as a uvularized vowel in SCLZ-A. It is possible that one of my older consultants who speaks SCLZ-A pronounces the uvular sound with some uvular frication as well, but this is accidentally hidden by the relatively noisy Zoom recordings. It remains to be determined whether there is any uvular articulation in the speech of SCLZ-O speakers.

It is likely that Avelino Becerra's (2004) claim that the uvular is an allophone of /g/ is the best analysis of the Lachirioag Zapotec data as well. However, I represent the uvular vowel as *agh* orthographically for the purposes of this thesis; for example, 'star' is *bêragh*, and 'stone' is *yiagh*.

1.4   Basic clause structure

1.4.1   Word order

The default word order in Lachirioag Zapotec is VSOX (3a), though arguments are frequently fronted to a preverbal position (3b,c). When there is a fronted argument, there is also an obligatory coindexed pronominal that occurs postverbally (see section 4.2.1). In (3b), this is the subject clitic =*bë* and in (3c) it is the independent object pronoun *lén*.

(3) a. [Ba-   **sor**]   Maur velador na.

   PERF/B- remove M.   candle that

   'Maur put out the candle.'

b. Maur [ba-   **sor**   *(=bë)] velador na.

   M.   PERF/B- remove =3INFOR candle   that

   'It was Maur who put out the candle.'

c. Velador na   [ba-   **sor**]   Maur *(lé=n).

   candle   that PERF/B- remove M.   PRO=3INAN

   'It was that candle that Maur put out.'

When there are two postverbal arguments, the argument closest to the verb is obligatorily interpreted as the subject (4). Direct and indirect objects, on the other hand, may occur in either order. In both of the sentences in (5), both *Pelz* and *dia Wer*[5] can be understood as either the direct or indirect object.

(4) [B-   **loku**] Maur xhnna'a Pelz.
    PERF/B- anger M.   mother P.

    'Maur angered Pelz's mother.'
    *'Pelz's mother angered Maur.'

(5) a. [B-   **ríd**   =a'] Pelz dia Wer.
       PERF/B- show =1SG P.   d.W.

    b. [B-   **ríd**   =a'] dia Wer Pelz.
       PERF/B- show =1SG d.W.   P.

       'I introduced Pelz to dia Wer.'
       'I introduced dia Wer to Pelz.'

Postverbal arguments may be realized as full nominals (4, 5), or as independent or dependent pronouns (6). See section 4 for a list of all pronouns that occur in Lachrioag Zapotec.

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[5]*Dia* is a title often placed before female names to disambiguate them from male names. It is sometimes translated as 'Ms.' in English or 'señora' in Spanish. For example, *Wer* comes from Spanish *Manuel*, and *dia Wer* is equivalent to Spanish *Manuela*.

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(6) a. B-　　**ríd**　=a　　=n.

　　　PERF/B- show =1SG =3INAN

　　　'I showed it.'

　　b. [B-　　**ríd**　=a']　rè.

　　　PERF/B- open =1SG 2SG

　　　'I showed you.'

Independent pronouns behave like full nominals when it comes to the order of direct and indirect objects. In (7), both the first-person plural inclusive independent pronoun *djo'* and the third-person inanimate independent pronoun *lén* may be interpreted as either the direct or indirect object. In contrast, when all three arguments are dependent pronouns, the order of S-IO-DO is fixed. In (8), it is the third-person formal clitic *=e* that is interpreted as the indirect object. The third-person animate clitic *=ba*, which surfaces to the right of *=e*, can only be interpreted as the direct object.

(7) [B-　　**rid**　=a']　djo'　　lé=n.

　　PERF/B- show =1SG 1PL.INCL PRO=3INAN

　　'I showed it to us.'

　　'I showed us to it.'

(8) B-　　**ríd**　　=e　　=ba.

　　PERF/B- open/1SG =3FOR =3ANIM

　　'I showed her to it.'

　　*'I showed it to her.'

Like arguments, adverbs and PPs may also appear in a clause-initial position (9), though PPs are elicited clause-finally more often than not.

(9) a. {T=zha=zë} **Ben**   Maur to   yo'o   {t=zha=zë}.

one=day=z   PERF/B.do M.   one house one=day=z

'Maur built a house (in just one day).'

b. {Ren Maur} [Gu-   **za'**   =a]   {ren Maur}.

with M.   PERF/GU- walk =1SG with M.

'I walked (with Maur).'

Negation, wh-words, and the polar question particle *á* obligatorily surface preverbally. There are four negation words: *kŭ* for clausal negation (10a), *kegë* for constituent negation (10b), *kub* 'nothing' (10c), and *kwi* 'no' (10d). One of my consultants does not have *kegi* in their lexicon, and so extends *kwi* to instances of constituent negation instead.

(10) a. Kŭ [b-   **kwezh**] Maria.

NEG PERF/B- play   M.

'Maria didn't perform.'

b. Kegë/kwi Maria=n [b-   **kwezh** =bë].

NEG   M.=N   PERF/B- play   =3INFOR

'It wasn't Maria who performed (someone else did).'

c. Kub   [dj-   **zheb** =ks]   bi   na.

nothing CONT- fear   =EMPH person that

'That person fears nothing.'

d. Kwi, to [dj-   **ianid**   =z =bë   =n].

no   one CONT- understand =Z =3INFOR =3INAN

'No, he only understands it.' (Response to the statement: 'Bedu speaks Zapotec.')

Constituent question words are obligatorily fronted (compare (11b) with (11c)). When the question word appears in a PP, the entire PP is fronted with inversion of preposition-

complement order (compare (11b) with (11d)). Pied-piping is required, so a construction like (11e) in ungrammatical.

(11) a. **Bet**   Yiaghdo' ye'enne=n [ro Maur].
          PERF/B.sell Y.   plate=N   to M.
          'Yiaghdo' sold the plates to Maur.'

      b. [Nŭ ro]=n **bet**   Yiaghdo' ye'enne=n?
          who to=N PERF/B.sell Y.   plate=N
          'Who did Yiaghdo' sell the plates to?'

      c. *__Bet__   Yiaghdo' ye'enne=n [ro nŭ]=n?
          PERF/B.sell Y.   plate=N   to who=N

      d. *[Ro nŭ]=n   **bet**   Yiaghdo' ye'enne=n?
          to   who=N PERF/B.sell Y.   plate=N

      e. *Nŭ=n   **bet**   Yiaghdo' ye'enne=n ro?
          who=N PERF/B.sell Y.   plate=N   to

Polar questions are introduced by the clause-initial question particle _á_ (12b).

(12) a. Dj-   **ianid**   =u.
          CONT- understand =2SG
          'You understand.'

      b. Á dj-   **ianid**   =u?
          Q CONT- understand =2SG
          'Do you understand?'

With respect to word order within noun phrases, quantifiers are prenominal (13), while demonstratives, adjectives, and modifying prepositional phrases appear postnominally (14).

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There is really only one preposition that may head a nominal-modifying PP, which is genitive *che* 'of'.

(13) djop wazha'a
      two   soothsayer
      'two soothsayers'

(14) a. biz nga
          cat this
          'this cat'

      b. benn   weu
          person young
          'young person'

      c. yid   che bedjagh
          skin of   chicken
          'chicken skin'

There is also a postnominal enclitic =*n*, which is generally translated as 'the' in the data presented in this thesis (15a). This nominal enclitic can cooccur with demonstratives (15b,c). It is used for a wide variety of purposes, including marking definiteness, shared information in the discourse, and topicalized or focused noun phrases. It also frequently occurs with wh-words, as it does in the constituent question in (11b).

(15) a. biz=n
          cat=N
          'the cat'

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b. biz   nga=n

    cat   this=N

    'this cat'

c. biz   na=n

    cat   that=N

    'that cat'

1.4.2   The verbal template

The verb – including the root and all of the elements that may attach to it – can be divided into five general parts. From left to right, these parts are the TAM prefixes, the verbal stem, the comitative enclitic *=ren*, the adverbial clitics, and the argument clitics. This is shown in the top half of figure 1.1.
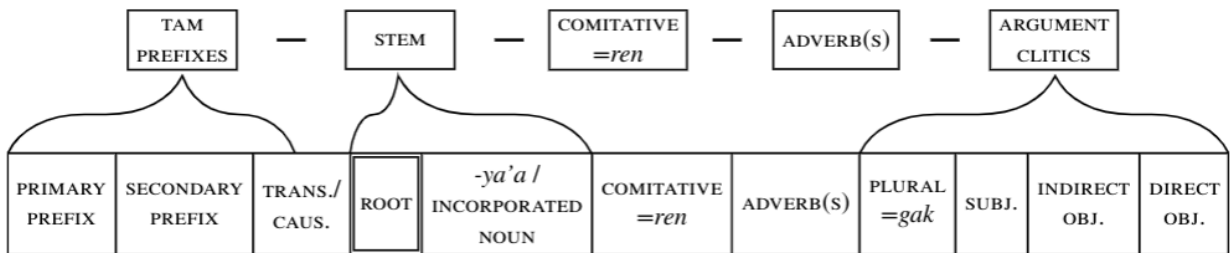
Figure 1.1: Verbal morphology template for SCLZ

    Closest to the verb root are the transitivity- and causativity-related prefixes to the left and the suffix *-ya'a* and incorporated nouns to the right. Both *-ya'a*[6] and incorporated nouns, which are bodypart nouns that have been compounded with the verb root (Foreman 2006), are lexically selected. For example, the verb *djne* 'speak' may select for either *-ya'a* (16b) or the incorporated noun *-ra'azh*, related to *ra'azhdo'* 'heart' (16c), but the semantically similar verb *djshalagh* 'talk' does not select for either and so cannot occur with them (16d). Although my speakers do seem able to decompose, for example, a stem containing *-ya'a* or *-ra'azh* in order to identify the verb root, the meanings assigned to that stem appear to be

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almost idiomatic, especially in the case of *-ya'a* (16b).

(16) a. Dj-   **ne**   =bë.

CONT- speak =3INFOR

'He's speaking.'

b. Dj-   **ne**   -ya'a =bë.

CONT- speak -YA'A =3INFOR

'He's speaking impolitely/vulgarly; He's guessing wildly (but luckily).'

c. Dj-   **ne**   -ra'azh =bë.

CONT- speak -heart   =3INFOR

'He's speaking desirously.'

d. *Dj-   **shalagh** -ya'a/-ra'azh =bë.

CONT- talk   -YA'A/-heart =3INFOR

Transitivity- and causativity-related morphology, which sits on the left edge of the verb root, appears to take scope over *-ya'a* and incorporated nouns. For example, the verb *djbezh* 'cry' may occur with the suffix *-ya'a* to form *djbezhya'a* 'scream'. When causative verb *djkwezh* 'make cry' occurs with the suffix *-ya'a*, it has the meaning of 'make someone scream' (17). It does not have the meaning of 'make someone cry in X manner'. Therefore, the postverbal suffixes sit closer in the structure to the verb root than any of the preverbal morphology, and the root and suffix together can be considered the stem to which all other verbal morphology attaches.

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[6]Macuiltianguis Zapotec also has the suffix *-ya'a*, which behaves differently from incorporated nouns in its placing respective to clitic adverbs. Foreman (2006) analyzes it as a fossilized derivational suffix that indicates that "the event denoted by the verb has been done with aggression" (142).

(17) a. [B- **kwezh** =bë] Maur.

PERF/GU- make.cry =3INFOR M.

'She made Maur cry.'

b. [B- **kwezh** -ya'a =bë] Maur.

PERF/B- make.cry -YA'A =3INFOR M.

'She made Maur scream.'

The comitative enclitic =*ren*, which has the same form as the independent preposition *ren* 'with', always follows the verbal suffixes and precedes the adverbial clitics. Only a restricted set of verbs may occur with =*ren*, including *djshalagh* 'talk', *djred* 'see', and *djbezh* 'cry'. It cannot occur with the verb *djkwezh* 'play (an instrument)' (19), despite the fact that it is a causative derived from *djbezh* 'cry', which does allow =*ren* (18). This suggests that the restricted distribution of =*ren* has nothing to do with lexical selection by the verb root itself.

(18) a. Maria [gu- **djezh** =bë] ren Maur.

M. PERF/GU- cry =3INFOR with M.

'Maria cried with Maur.'

b. Maria [gu- **djezh** =ren =bë] (ren) Maur.

M. PERF/GU- cry =COMIT =3INFOR with M.

(19) a. Maria [b- **kwezh** =bë] ren Maur.

M. PERF/B- make.cry =3INFOR with M.

'Maria played (an instrument) with Maur.'

b. *Maria [b- **kwezh** =ren =bë] (ren) Maur.

M. PERF/B- make.cry =COMIT =3INFOR with M.

While the preposition *ren* 'with' is used in both comitative (18a, 19a) and instrumental constructions (20a), the clitic =*ren* is only used in comitative constructions like (18b) and

cannot be used to express an instrument (20b).

(20) a. Wer [b-   **chugu** =bë]   pastel na   ren   to   kushiy.
          W.   PERF/B- cut   =3INFOR cake   that with one knife

          'Wer cut the cake with a knife.'

      b. *Wer [b-   **chugu** =ren   =bë]   pastel na   (ren) to   kushiy.
          W.   PERF/B- cut   =COMIT   =3INFOR cake   that with   one knife

In comparison to *=ren*, the adverbial clitics tend to have less restrictions in what verbs they may occur with, though there are some that are only used in highly specific contexts.[7] Multiple adverbial clitics may attach to the same verb stem; some with strict relative ordering (21), and some without (22), though in the latter case there is a subtle semantic shift between the different orderings. The sentence in (22a), with dubitative *=lga* preceding emphatic *=ks*, expresses that the speaker is not confident in the truthfulness of their statement. When the order between *=lga* and *=ks* is reversed, it creates the additional connotation that the speaker does not think it is important whether or not their statement is true (22b).

(21) a. [**Bet**   =te =ks   =bë]   belë=n.
          PERF/B.kill =TE =EMPH   =3INFOR snake=N

          'She really did kill the snake.'

      b. *[**Bet** =ks =te =bë] belë=n.

(22) a. Kŭ [**nezd**   =a'], [b-   **kwezh** =lga   =ks   =gak =bë].
          NEG NEUT.know =1SG   PERF/B- make.cry =DOUBT =EMPH =PL   =3INFOR

          'I don't know, they might have performed.'

---

[7]For example, the adverb clitic *=lolagh*, which indicates that an action involves a large quantity of a water-based liquid, may only attach to verbs that indicate an action involving a water-based liquid.

b. Kŭ [**nezd** =a'], [b- **kwezh** =ks =lga =gak =bë].

    NEG NEUT.know 1SG   PERF/b- make.cry =EMPH =DOUBT =PL =3INFOR

    'I don't know, they might have performed (but it's not important).'

To the right of the adverbial clitics are the argument clitics. While it is possible for up to three argument clitics to attach to a single verb, argument clitic combinations are governed by two cooccurrence restrictions. First, there is an animacy-related clitic hierarchy, and each clitic must be at least one step lower on the hierarchy than the clitic that precedes it. Second, argument clitics must occur in a strict S-IO-DO order. Both of these restrictions are elaborated on in section 4.2. The third-person plural marker =*gak* always attaches to the left of all argument clitics, regardless of what argument it corresponds to. It is usually optional if plurality can be recovered from context, except for contexts where there is a preverbal plural subject, in which case it is obligatory. This is discussed further in section 4.3.

Unlike all other verbal morphology, the Tense-Aspect-Mood (TAM) prefixes are always obligatory; the verb root must always occur with at least one TAM prefix. There are two kinds of TAM prefixes: primary prefixes (section 2), which are the leftmost element of the verb, and secondary prefixes (section 3), which occur between the primary prefix and the verb. Unlike primary prefixes, secondary prefixes are not obligatory. Primary TAM prefixes are additionally unique in that a change in primary prefix causes a segmental change for some verb roots. For example, the perfective primary prefix *b-* changes the vowel in *dj-un* 'doing' to *ben* 'did' and the perfective primary prefix *gu-* changes the initial consonant of *dj-go* 'throwing in' to *gu-ro* 'threw in'.

The verbal template in figure 1.1 is essentially the same as the one found across the Zapotec family (e.g., Operstein 2014:103). The area with the most crosslinguistic variation, at least in the Northern Zapotec group, is the argument clitics. Yalálag Zapotec has the same plural marking strategy and clitic hierarchy as Lachirioag Zapotec (Avelino Becerra 2004), but other Northern Zapotec languages may greatly differ on these two points. The cognate of SCLZ's plural marker =*gak* is only used to mark plurality of object arguments in Yatzachi Zapotec, while plural subject marking is done via verbal prefixes (Butler 1980); in

Zoogocho Zapotec, verbal prefixes are used to mark plurality for all arguments (Sonnenschein 2004). In contrast, the plural marker in Macuiltianguis Zapotec is an inseparable part of the clitic pronouns (Foreman 2006). Yatzachi and Zoogocho Zapotec also have different clitic hierarchies governing the cooccurrence of argument clitics (Butler 1980; Sonnenschein 2004).

This thesis will focus primarily on the TAM prefixes and argument clitics in Lachirioag Zapotec. Detailed discussion of the rest of the verbal morphology will be set aside due to length limitations.

1.5   Notes on glossing and translation

In this thesis, verb roots are bolded in all SCLZ examples, and square brackets may additionally be placed around all of the morphemes associated with a particular root in order to make word boundaries more easily identifiable.

Lachirioag Zapotec has no grammatical gender, and the third person singular human pronouns may be translated as 'he', 'she', or semantically singular 'they' depending on context (23). The translations I give for sentences containing these pronouns use whatever gender pronoun I used when eliciting; gender is not conveyed in the SCLZ data itself. Additionally, whenever number is not specified in the gloss, it is ambiguous between singular and plural.

(23) [Dj-   **e'nd** =bë]   [gú-   **guy** =bë]   nil.
      CONT- want =3INFOR IRR/G- cook =3INFOR nixtamal

      'She/he/they want(s) to cook nixtamal.'

Since all verb roots must occur with at least one TAM prefix and verb roots may vary in form depending on the TAM prefix they occur with, I follow common practice in citing verbs with the continuative primary prefix *dj-* (e.g., *djguy* 'cook'). This matches with the way that verbs are cited in the ongoing Lachirioag Zapotec dictionary project.

1.6   Outline of thesis

This thesis focuses on the TAM prefixes and argument clitics found in Lachirioag Zapotec. The TAM prefixes may be divided into two categories based on their behavior. Primary prefixes, which occur first in the verbal complex, are discussed in chapter 2. The four main primary prefixes are the continuative, the neutral, the perfective, and the irrealis, which are examined in sections 2.1-2.4, respectively. There are two properties shared by both the perfective and irrealis prefixes. First, section 2.5.1 shows that they are both used in imperative constructions, the perfective in positive singular imperatives and the irrealis in all others. Second, they both display significant, apparently lexically-determined allomorphy, which has been argued to be evidence of verb inflectional classes in Zapotec languages. This is discussed in section 2.5.2. Section 2.6 presents a fifth primary prefix, which indicates incomplete motion and is extremely restricted in its use.

Chapter 3 introduces the secondary TAM prefixes, which occur between the primary prefixes and the verb root. There are three secondary prefixes: andative, which indicates movement away from the speaker; venitive, which indicates movement towards the speaker; and repetitive, which may indicate the repetition of an action, enforce a habitual reading of an action when it cooccurs with a continuative primary prefix, or, for a few verbs, indicate the completion of an action. The andative and venitive aspects, grouped together as displacement aspects, are discussed in section 3.1 and the repetitive aspect is the focus of section 3.2. The semantic ambiguity that originates from the multiple interpretations of the repetitive prefix, and from the fact that both the repetitive and andative prefixes have the form *a-*, is examined in section 3.3.

Chapter 4 focuses on argument clitics and plural marking. The inventory of pronouns in SCLZ is given in section 4.1, and I argue that all of the independent pronouns, save the first-person plural inclusive pronoun *djo'*, are formed from the corresponding argument clitic attached to a semantically-null pronominal base. The allomorphy exhibited by the first-person singular clitic =*a'*, the second-person singular clitic =*u*, and the third-person formal clitic =*(g)e* when they attach to a uvular-final stem is discussed in section 4.1.1. Section

4.2 examines the cooccurrence restrictions that argument clitics have with coreferential independent nominals and with other argument clitics. The plural marker *=gak* is described in section 4.3. Section 4.3.1 shows that, although *=gak* is usually optionally expressed, it is obligatory when a plural subject surfaces preverbally. The use of *=gak* with first person arguments is discussed in section 4.3.2.

CHAPTER 2

Primary prefixes

Verbs in SCLZ always occur with at least one verbal prefix. While these are commonly referred to as aspect prefixes in the Zapotec literature, works such as Lee (1999, 2008), Munro (2006), and Bueno Holle (2019) have argued for other Zapotec languages that they may convey tense or modal information as well. Therefore, they are called TAM prefixes in this thesis.

There are two kinds of TAM prefixes in Lachirioag Zapotec: primary prefixes and secondary prefixes. The terms "primary prefix" and "secondary prefix" traditionally come from the linear order that these prefixes occur in.[1] There are two main properties of primary prefixes. First, they are always the leftmost element attached to the verb stem and second, they obligatorily occur with every verb root. The four main primary prefixes in SCLZ are the continuative, neutral, perfective, and irrealis. The sentences in (24) show all four attached to the verb *djguy* 'cook'.

(24)   a.   Maur   [dj-   **guy**   =bë]   nil   na.
            M.   CONT-   cook   =3INFOR   nixtamal   that
            'Maur is cooking the nixtamal.'

       b.   Maur   [n-   **guy**   =bë]   nil   na.
            M.   NEUT-   cook   =3INFOR   nixtamal   that
            'Maur has the nixtamal cooked.'

---

[1]The terms "primary prefix" and "secondary prefix" come from Butler's (1980) terms *aspecto primario* 'primary aspect' and *aspecto secundario* 'secondary aspect', which refer to the aspectual information conveyed by primary and secondary prefixes, respectively.

c. Maur [b-   **guy** =bë]   nil   na.

    M.   PERF/B- cook =3INFOR nixtamal that

    'Maur cooked the nixtamal.'

d. Maur [gú-   **guy** =bë]   nil   na.

    M.   IRR/G- cook =3INFOR nixtamal that

    'Maur will cook the nixtamal.'

Section 2.1 focuses on the continuative, section 2.2 on the neutral, section 2.3 on the perfective, and section 2.4 on the irrealis. Section 2.5 discusses the perfective and irrealis, which share properties to the exclusion of the other primary prefixes: namely, both are used in imperatives and exhibit extensive, apparently lexically-determined allomorphy. A fifth primary prefix, used in highly restricted contexts to indicate incomplete motion, is presented in section 2.6.

2.1 The continuative

The continuative prefix, which has the form *dj-*, is also called the habitual by Avelino Becerra (2004) for Yalálag Zapotec, Foreman (2006) for Macuiltianguis Zapotec, and Tejada (2012) for Sierra Juárez Zapotec. However, because this prefix can indicate both progressive (25a) and habitual events (25b), I follow Butler (1980) in referring to it as continuative (*aspecto continuativo*).

(25) a. Nna=djga [dj-   **guy** =bë]   nil.

    now=DJGA CONT- cook =3INFOR nixtamal

    'He is cooking the nixtamal right now.'

b. You=zha [dj-   **guy** =bë]   nil.

    all=day   CONT- cook =3INFOR nixtamal

    'He cooks nixtamal every day.'

Since this prefix occurs with essentially all verbs and has no allomorphy, it is generally used as the dictionary citation form of verbs.

2.2 The neutral

The neutral prefix *n-* is frequently claimed to indicate stative aspect (i.a., Butler 1980; Avelino Becerra 2004; Sonnenschein 2004; Foreman 2006). Munro et al. (1999); Munro (2002, 2006) calls this aspect "neutral" rather than stative in Valley Zapotec. According to her, verbs inflected with the neutral prefix "generally [indicate] a state resulting from the action of those verbs" (Munro 2006:180). Examples are shown in (26).

(26) a. Ba   [n- **djio**]   xhbe'e alfombra na.
        already NEUT- be.frayed border rug   that
        'The rug is already frayed.'

    b. Ba   [n- **bio** =bë]   xhbe'e alfombra na.
        already NEUT- fray =3INFOR border rug   that
        'He has the rug frayed already.'

The copula *nak* 'be' most commonly occurs with the neutral prefix:

(27) a. Kul [n-   **ak** =bë]   to   wased   benn.
        K.   NEUT- be =3INFOR one teaching person
        'Kul is a teacher.'

    b. Xhpaxh=e   nga [n-   **ak** =n]   xhna.
        xpaxh=3FOR this NEUT- be =3INAN red
        'This xhpaxh of hers is red.'[2]

---

[2]A xhpaxh is a traditional item of clothing worn by women, similar to a fannypack.

My consultants consistently translate sentences containing neutral verbs a certain way in both English and Spanish, which I follow when translating these sentences throughout this thesis. Intransitive verbs are translated with a present tense copula and the main verb as a past participle (28a), while transitive verbs are translated with the present perfect in English, with the direct object intervening between the auxiliary and the main verb (28b). The Spanish translation of (28b) does not contain the traditional present perfective construction (which involves the verb *haber* 'to have' instead of *tener* 'to have'), but does indicate the equivalent of a present perfective.[3] The translation in (28b) should not be taken to indicate causation: 'Maur' is the one who did the action of breaking the tree branch, he did not have someone else do the action. More work is needed to determine the relevance, if any, of these specific translation strategies.

(28) a. Ba   [n-   **asho**] ne   yag na.
          already NEUT- break   arm   tree that

          'The tree branch is already broken.' (Spanish: 'La rama del árbol ya está rota.')

      b. Maur ba   [n-   **yisho** =bë]   ne   yag na.
          M.   already NEUT- break   =3INFOR arm   tree that

          'Maur already has the tree branch broken.' (Spanish: 'Maur ya tiene rota la rama del árbol.')

The neutral prefix *n-* cannot occur with all verbs, though it seems that the set of verbs that do not occur with *n-* is relatively small. A few of these verbs, all intransitive, express the neutral aspect through the use of a neutral copula + adjective construction. An example of this with 'warm (intr.)' is shown in (29).

_____

[3]I am not sure what the difference is between the *haber*-based perfective and the *tener*-based perfective constructions in Spanish. Based on my personal experience, this is a relatively common type of construction in Latin American Spanish.

(29) a. B-   **zha**   =n.

          PERF/B- warm   =3INFOR

          'It warmed.'

      b. Zha   [n-   **ak** =n].

          warm NEUT- be   =3INFOR

          'It's warm.'

Another subset of verbs that do not occur with *n-* are verbs derived from bare positional/existential verbs. These subsist of a small set of verbs used in basic locative and existential constructions that, unlike all other verb types, can appear without any (overt) verbal prefixes. However, given that they are often analyzed as occurring in the neutral aspect by default, it may be better to say that these verbs take a null allomorph of the neutral prefix (Sonnenschein 2004; Lillehaugen and Sonnenschein 2012). An example of *zo* 'stand' is shown in (30).

(30)   Chop no'r   zan=a'[5]   **zo**.

       two   woman sibling=1SG NEUT.stand

       'I have two sisters.' (Lit. 'My two sisters are standing.')

This verb can occur with perfective *gu-*, as in (31a), but it cannot occur with *n-* (31b). Instead, *zo* 'stand' must appear without an overt verbal prefix in order to express the neutral aspect (31c). This is generally the case for all bare positional/existential verbs.

(31) a. Bentan=n [gu-   **zo**   =n]   be'e.

          window=N PERF/GU- stand =3INAN scratch

          'The window got scratched.'

---

[5]The kinship term *zan* refers to a sibling of a different gender than the speaker. The speaker of (30) is male.

27

b. *[N-　　**zo**　　=n]　　　be'e.

　　　NEUT- stand =3INAN scratch

　　　'It's scratched.'

c. [**Zo**　　　　=n]　　　be'e.

　　　NEUT.stand =3INAN scratch

　　　'It's scratched.'

However, *zo* 'stand' can occur with an overt neutral prefix in the causative version of the verb (32b). In (32a), the perfective prefix *b-* is used (in contrast to *gu-* in (31a)). The prefix *n-* occurring with the causative version of *zo* 'stand' was only produced by one of my consultants, but was rejected by another consultant.

(32)　a.　Maur [b-　　**zo**　　=bë]　　　yesu=n be'e.

　　　　　M.　　PERF/B- stand =3INFOR pot=N scratch

　　　　　'Maur cracked the pot.'

　　b.　Maur [n-　　**zo**　　=bë]　　　yesu=n be'e.

　　　　　M.　　NEUT- stand =3INFOR pot=N scratch

　　　　　'Maur has the pot cracked.'

For other verbs that do not take the neutral prefix, my consultants will volunteer constructions like that in (33b) instead, where a perfective verb occurs with the adverb *ba* 'already'.

(33)　a.　*Pelz (ba)　[n-　　**yaz**　=bë]　　　to　yag.

　　　　　P.　　already NEUT- plant =3INFOR one tree

　　b.　Pelz ba　　[ba-　　**yaz**　=bë]　　　to　yag.

　　　　　P.　　already PERF/B- plant =3INFOR one tree

　　　　　'Pelz already has a tree planted.'

There are also a few verbs, mostly transitive, that take the neutral prefix only if they also occur with the adverb *ba* 'already':

(34) a. Pelz *(ba) [n- **xen** =bë] kush=n.

P. already NEUT- make.fat =3INFOR pig=N

'Pelz already has the pig fattened.'

b. Pelz *(ba) [n- **sozhd** =bë] Maur.

P. already NEUT- make.drunk =3INFOR M.

'Pelz already has Maur drunk.'

The neutral prefix is often called the stative prefix because it does appear to be used to express states and conditions, especially when it occurs with intransitive verbs and the copula *nak* 'be'. When it occurs with transitive verbs, it appears to express a state resulting from the action of those verbs (Munro 2006). However, stativity does not seem to be an accurate description of what is actually expressed by the prefix *n-*. States have the property of being static and durative and are not associated with dynamism (Smith 1997). Thus, they do not occur with volitional/instrumental adverbials like *carefully* or *with a key* (35), since these are associated with agency and, therefore, with events, but they do occur with direct durative adverbials like *for an hour* or *all day* (36).

(35) a. *Felix was carefully sick.

b. *The door was open with a key.

(36) a. Felix was sick for an hour.

b. The door was open all day.

Verbs inflected with the neutral prefix *n-* show the opposite of the properties described above. They can occur with an instrumental adverbial like *ren to kushiy* 'with a knife' (37), but they cannot occur with a durative adverbial like *ka do tgorr* 'for about an hour' (38).

29

(37) a. Ba   [n- **djio**]   xhbe'e   alfombra na   ren to   kushiy.

       already NEUT- be.frayed border=rug that   with one knife

       'The rug is already frayed with a knife.' (Sp.: 'La alfombra ya está deshilada con un cuchillo.')

    b. Ba   [n- **bio** =bë]   xhbe'e alfombra na   ren to kushiy.

       already NEUT- fray =3INFOR border rug   that with one knife

       'He has the rug frayed already with a knife.' (Sp.: 'Ya tiene la alfombra deshilada con un cuchillo.')

(38) a. *Ka do   t=gorr   [n- **djio**]   xhbe'e alfombra na.

       like DIMIN one=hour NEUT- be.frayed border rug   that

       'The rug was frayed for about an hour.'

    b. *Ka do   t=gorr   [n- **bio** =bë]   xhbe'e alfombra na.

       like DIMIN one=hour NEUT- fray =3INFOR border rug   that

       'He has the rug frayed for about an hour.'

With clausal negation, a neutral verb indicates an action that has not happened. The sentence in (39) does not have the interpretation that Maur started to shred pig meat but did not finish, or the interpretation that Maur is shredding pig meat at the time of the utterance but has not finished yet. The only possible interpretation is one where Maur has not shredded any pig meat at all. The neutral aspect in (39) appears to indicate a complete action as a whole.

(39) Kŭ [n- **xhoxho**] Maur to   kush.

    NEG NEUT- shred   M.   one pig

    'Maur doesn't have a pig shredded.'

Neutral-inflected verbs do not display the properties associated with stativity, so calling this prefix "stative" is misleading, which is why I follow Munro et al. (1999) in calling it

"neutral". Further study is needed in order to determine the exact semantics conveyed by the primary prefix *n-*.

2.3 The perfective

The perfective prefix is also referred to as the "completive" by Butler (1980) for Yatzachi Zapotec (here: *aspecto completivo*), Sonnenschein (2004) for Zoogocho Zapotec, Foreman (2006) for Macuiltianguis Zapotec, and Tejada (2012) for Sierra Juárez Zapotec. As Munro (2006) points out, since this prefix is also used in positive singular imperatives, it does not seem appropriate to term this aspect "completive". Instead the TAM information conveyed by this prefix seems to behave more like perfective aspect, which is used in imperative constructions in other languages, including Russian and Misantla Totonac (Auwera et al. 2009). There are two main allomorphs of the perfective prefix, *gu-* and *b-*, shown in (40).[6]

(40) a. [Gu-   **daw**] beku na.
        PERF/GU- eat   dog   that
        'The dog ate.'

    b. [B-   **waw**] Yiaghdo' beku na.
        PERF/B- feed   Y.   dog   that
        'Yiaghdo' fed the dog.'

Of my two main consultants, one consistently pronounces the *gu-* allomorph as a labiovelar glide [w] before consonant-initial verbs and the other consistently pronounces it as a voiced labialized velar fricative [ɣʷ] or approximant [ɣ̞ʷ] before consonant-initial verbs. When it attaches to vowel-initial verbs, it is always pronounced as a labiovelar glide [w] (41).

_____

[6]There is actually a third allomorph of the perfective prefix (*y-*), which is only used with secondary andative aspect (see section 3.1).

(41) W-   **e**   =bë.

PERF/GU- drink =3INFOR

‘She drank.’

There is a strong correlation between the perfective prefix *b-* and transitive verbs in Lachirioag Zapotec, while the perfective prefix *gu-* is more evenly split between transitive and intransitive verbs, though with a slight tendency to appear more often on intransitive verbs. A common trend in causativity alternations is for the *gu-* prefix to occur with the intransitive verb, while the *b-* prefix occurs with the causative (42).

(42)   Perfective allomorphy in causative alternations

Intransitive		*Transitive*	
a. gu-yey	‘burn’	b-zey	‘burn’
b. gu-djezh	‘cry’	b-kwezh	‘make cry’
c. gu-zozhd	‘be drunk’	b-sozhd	‘make drunk’
d. gu-xono	‘be wrinkled/pleated’	b-xono	‘wrinkle, pleat’

Additionally, the *b-* prefix is the only perfective prefix that occurs with venitive and repetitive secondary prefixes (43) or argument structure-related prefixes like causative *s-* or detransitivizing *a-* (44).

(43)   a.   Pelz [b-   a-   **tas**   =e]   yito.

P.   PERF/B- REP- sleep =3FOR again

‘Pelz slept again.’

b.   Pelz [b-   d-   **tas**   =e].

P.   PERF/B- VEN- sleep =3FOR

‘Pelz came and slept.’

(44) a. Pelz [b-   s-   **bizh** =e]   yichagh Yiaghdo'.
          P.   PERF/B- CAUS-   dry   =3FOR   head   Y.

          'Pelz dried Yiaghdo's hair.'

      b. [B-   a-   **dey**] ză=n.
          PERF/B-   MID?-   cook   beans=N

          'The beans got cooked.'

Zapotec languages are heavily transitivizing languages, which means that intransitive verbs tend to be morphologically simpler while transitive verbs, which are derived from intransitives, are more morphologically complex (Operstein and Sonnenschein 2015; Uchihara and Gutiérrez 2020). This, combined with the strong correlation between perfective *b-* and transitive verbs and the fact that the *b-* allomorph is the default form used when overt material separates the perfective prefix and the verb root, suggests that the verbs that take the *b-* prefix have additional structure intervening between the primary prefix and the verb root, even when there is no overt realization of this structure. For example, the change in perfective prefix from intransitive *gu-xono* 'was pleated' in (45a) to transitive *b-xono* 'pleated' in (45b) would be due to additional structure separating the primary prefix from the verb stem in (45b), although the only evidence of this additional structure is the change in the perfective allomorph.

(45) a. [Gu-   **xono**]   zud   Yiaghdo'.
          PERF/GU-   be.pleated   skirt Y.

          'Yiaghdo's skirt was pleated.'

      b. Pelz [b-   **xono** =bë]   zud   Yiaghdo'.
          P.   PERF/B-   pleat   =3INFOR   skirt Y.

          'Pelz pleated Yiaghdo's skirt.'

This covert additional structure is not always transitivizing or causativizing. For example,

the transitive verb *djaw* 'eat' takes the *gu-* perfective prefix, but both the causative *djwaw* 'feed' and the intransitive *djdaw* 'be eaten' take the *b-* prefix (46). Interestingly, while *djaw* 'eat' undergoes a stem change when it occurs with the perfective prefix, the hypothesized derived verbs *djwaw* 'feed' and *djdaw* 'be eaten' are entirely regular.

(46)

	Perfective	*Continuative*	*G-irrealis*
'eat':	gu-daw	dj-aw	g-áw
'feed':	b-waw	dj-waw	gú-waw
'be eaten':	b-daw	dj-daw	dáw

This analysis fails to account for causative alternations like that in (47). The fortition of the initial consonant from intransitive *djdjeza* 'tear' (47a) to transitive *djcheza* 'tear' (47b) is argued to be the residue of a historic causative prefix **k-* (Operstein 2014), yet the causative verb takes perfective *gu-* rather than *b-*. There are other intransitive-transitive pairs like that in (48) which involve both fortition of the initial consonant and a change in perfective prefix, so it is not the case that the two are mutually exclusive. However, pairs like *djdjeza* 'tear (intr.)' and *djcheza* 'tear (tr.)' occur only rarely.

(47)   a.   Gu-   **djeza** =n.
             PERF/GU-   tear   =3INAN

             'It tore.'

       b.   Gu-   **cheza** =bë   =n.
             PERF/GU-   tear   =3INFOR   =3INAN

             'She tore it.'

(48)   a.   Gu-   **djugu** =n.
             PERF/GU-   be.cut   =3INAN

             'It got cut.'

b. B-   **chugu** =bë   =n.

PERF/B- cut   =3INFOR =3INAN

'She cut it.'

The allomorphs of the perfective prefix, and how they relate to argument structure alternations, are discussed further in section 2.5.2.

2.4   The irrealis

I follow Munro et al. (1999) and Lee (1999, 2008) in referring to the fourth primary prefix as "irrealis", though it is often called the "potential" instead (e.g., Butler 1980; Avelino Becerra 2004; Foreman 2006; Tejada 2012). There are two kinds of irrealis marking in Lachirioag Zapotec, shown in (49). The first, called *wa*-irrealis, is named after the prefix that realizes it: *w(á)*-. The second kind of irrealis, termed *g*-irrealis, is realized via a variety of strategies, including its namesake prefix *g*- (49a), the prefix *gú*- (49b), the prefix *y(í)*- (49c,d), fortition of a root-initial consonant (49e,f), or by no segmental change at all (49g,h). Both the *g*-irrealis and the *wa*-irrealis are associated with a high tone that occurs on the leftmost tone-bearing segment; this high tone is not associated with any other primary or secondary prefixes.

(49)   Irrealis forms of verbs

	Wa-irrealis	*G-irrealis*	*Gloss*
a. dj-aw	w-áw	g-áw	'eat'
b. dj-guy	wá-guy	gú-guy	'cook'
c. dj-s-bizh	wá-s-bizh	yí-s-bizh[7]	'make dry'
d. dj-id	w-íd	y-íd	'come'
e. dj-de	wá-de	té	'pass by'
f. dj-bezh	wá-bezh	kwézh	'cry'
g. dj-red	wá-red	réd	'look at'
h. dj-zed	wá-zed	zéd	'learn'

The data in (49) display what I will argue are two different patterns of allomorphy. The first concerns the variable realization of the *g*-irrealis; section 2.4.1 gives evidence that this is primarily the result of historical phonological processes undergone by the prefix *g*-. Then section 2.4.2 argues that the contrast between *wa*- and *g*-irrealis is the result of syntactically-conditioned allomorphy. *G*-irrealis marking only occurs on verbs in subordinate clauses and *wa*-irrealis marking occurs on matrix verbs.

2.4.1 *G*-irrealis allomorphy

There are five ways of marking *g*-irrealis, all of which were shown in (49). These are listed below:

(50) Strategies of marking *g*-irrealis:

1. The prefix *g*- (*djaw* 'eat' → **g***áw*)

2. The prefix *gú*- (*djguy* 'cook' → **gú***guy*)

3. Fortition of a root-initial lenis consonant (*djde* 'pass by' → **t***é*)

4. The prefix *y(í)*- (*djid* 'come' → **y***íd*)

5. No segmental change (*djzed* 'learn' → *zéd*)

This variability in how the *g*-irrealis aspect is marked on the verb is found across Zapotec languages (Operstein 2014). The Proto-Zapotec irrealis prefix has been reconstructed as **k*-, the ancestor of modern Zapotec *g*-, which is apparent in cases where the *g*-irrealis prefix attaches to a vowel-initial verb like *djaw* 'eat' (50a). Other Zapotec languages like Teotitlán Zapotec have a causative/agentive prefix *u*- (Uchihara and Gutiérrez 2020); the prefix *gú*- in SCLZ only occurs with transitive verbs. If the prefix *gú*- is actually a sequence of two

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[7]For one of my consultants, the *g*-irrealis form of *djsbizh* 'make dry' is *gú-sbizh* not *yí-sbizh*.

prefixes (e.g., *g-ú-guy* 'going to cook' rather than *gú-guy*), then this collapses the first two strategies in (50) into one.

Additionally, although historic singleton consonants are the source of modern lenis consonants in Zapotec (e.g., $*k^w >$ [b] or $*k >$ [g]), the combination of the Proto-Zapotec irrealis prefix *k-* and a singleton consonant results in a modern fortis consonant (e.g., *k-* $+ kw$ $>$ [kʷ] or *k-* $+ k >$ [k]). This is due to the fact that the prefix *k-* assimilated to the following consonant, creating an initial geminate, and geminate consonants are claimed to be the source of modern fortis consonants (e.g., Operstein 2014). With this in mind, the third strategy in (50), fortition of an initial lenis consonant, is yet another instance of the prefix *g-*. The revised version of (50) is given in (51):

(51) Strategies of marking *g*-irrealis (revised from (50)):

1. The prefix *g-*

    (a) Realized as *g-* before vowels

    (b) Realized as fortition before lenis consonants

2. The prefix *y(í)-*

3. No segmental change

There are three environments in which the *g*-irrealis prefix *y(í)-* occurs: 1) before a front vowel-initial verb (e.g., *djid* 'come' → *yíd*); 2) before the venitive secondary prefix *d-* (e.g., *dj-d-tas* 'come and sleep' → *yí-d-tas*; see section 3.1); and 3) before the causative prefix *s-* (e.g., *dj-s-bizh* 'make dry' → *yí-s-bizh*). For the last two environments, there is always the vowel [i] intervening between the irrealis prefix *y-* and the following prefix (either *d-* or *s-*); this intervening vowel does not occur with any other primary prefix. In section 1.3, it was mentioned that Lachirioag Zapotec has a phonological rule that realizes the lenis velar stop /g/ as a palatal glide [j] before front vowels [i] and [e]. Given that the prefix *y(í)-* always involves a front vowel, this suggests that this is another instance of the prefix *g-*, which

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becomes *y-* via a regular phonological alternation. This collapses the first two strategies in (51) into one:

(52) Strategies of marking *g*-irrealis (revised from (51)):

  1. The prefix *g-*

    (a) Realized as *g-* before non-front vowels

    (b) Realized as fortition before lenis consonants

    (c) Realized as *y-* before front vowels

  2. No segmental change

However, there does not seem to be a way to analyze the last strategy of *g*-irrealis marking, no segmental realization, as an instance of *g-*. This is especially clear with the verb *djzed* 'learn', which begins with the lenis fricative [z]. According to the rule (1b) in (52), the *g*-irrealis form of *djzed* should be *séd*; in other words, the initial [z] should undergo fortition to [s]. Yet the *g*-irrealis form of *djzed* is actually *zéd*. A possible explanation for these kinds of verbs may be that modern speakers of SCLZ do not represent the fortition process as involving an underlying [g], regardless of the historical origins of this process, and whatever conditions the fortition process for some lenis-initial verbs does not affect other lenis-initial verbs. Why there is this difference is still unknown, though it should be noted that the verbs that do not mark *g*-irrealis segmentally are overwhelmingly intransitive.

2.4.2 Clause-conditioned irrealis allomorphy

While *g*-irrealis is marked several different ways, *wa*-irrealis is always realized as *wá-* before consonant-initial verbs (e.g., *djguy* 'cook' → *wáguy*) and *w-* before vowel-initial ones (e.g., *djaw* 'eat' → *wáw*). While both *g*-irrealis and *wa*-irrealis verbs both bear the high tone associated with irrealis marking, they occur in complementary syntactic distribution. To begin with, *wa*-irrealis is preferred over *g*-irrealis with default VSO word order (53). The opposite

is true when there is a preverbal argument, regardless of whether the fronted argument is the subject (54) or object (55).

(53) a. *__Chúgu__   Maur lé=n.
         IRR/G.cut M.   PRO=3INAN

      b. [Wá-   __chugu__] Maur lé=n.
         IRR/WA- cut   M.   PRO=3INAN
         'Maur will cut it.'

(54) a. Maur [__chúgu__   =bë]   lé=n.
         M.   IRR/G.cut =3INFOR PRO=3INAN

      b.?? Maur [wá-   __chugu__ =bë]   lé=n.
         M.   IRR/WA- cut   =3INFOR PRO=3INAN
         'It's Maur who will cut it.'

(55) a. Yet=n   __chúgu__   Maur lé=n.
         tortilla=N IRR/G.cut M.   PRO=3INAN

      b.?? Yet=n   [wá-   __chugu__] Maur lé=n.
         tortilla=N IRR/WA- cut   M.   PRO=3INAN
         'It's the tortilla Maur will cut.'

G-irrealis marking is preferred in constituent questions as well:

(56) a. Nŭ __chúgu__   yet=n?
         who IRR/G.cut tortilla=N

      b.?? Nŭ [wá-   __chúgu__] yet=n?
         who IRR/WA- cut   tortilla=N
         'Who will cut the tortilla?'

Verbs inflected for *g*-irrealis can occur with negation (57a) and in embedded clauses (58b), but *wa*-irrealis verbs cannot (57b, 58b).

(57)   a.   Kŭ   [gú-   **de**   =bë   =n].
           NEG   IRR/G-   pass   =3INFOR   =3INAN

   b. *Kŭ   [wá-   **de**   =bë   =n].
           NEG   IRR/WA-   pass   =3INFOR   =3INAN

   'He will not let it pass through.'

(58)   a.   [Dj-   **e'nd**   =bë]   [gú-   **guy**   =bë]   nil.
           CONT-   want   =3INFOR   IRR/G-   book   =3INFOR   nixtamal

   b. *[Dj-   **e'nd**   =bë]   [wá-   **guy**   =bë]   nil.
           CONT-   want   =3INFOR   IRR/WA-   book   =3INFOR   nixtamal

   'He wants to cook nixtamal.'

In positive polar questions, a *wa*-irrealis verb may appear adjacent to the question marker *á* (59a), but cannot occur if there is an element intervening between *á* and the *wa*-irrealis verb (59b,c). The opposite is the case for verbs in the *g*-irrealis; they cannot occur adjacent to the question particle *á* (60a), but they may occur in a polar question if a fronted element intervenes between *á* and the verb (60b,c).

(59)   a.   Á   [wá-   **chugu**]   Maur=n   yet=n?
           Q   IRR/WA-   cut   M.=N   tortilla=N

   'Will Maur cut the tortilla?'

   b. *Á   Maur=n   [wá-   **chugu**   =bë]   yet=n?
           Q   M.=N   IRR/WA-   cut   =3INFOR   tortilla=N

   'Is it Maur who will cut the tortilla?'

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c. *Á yet=n   [wá-   **chugu**] Maur=n?

   Q tortilla=N IRR/WA- cut   M.=N

   'Is it the tortilla that Maur will cut?'

(60) a. *Á **chúgu** Maur=n yet=n?

      Q IRR/G- cut   M.=N

      'Will Maur cut the tortilla?'

    b. Á Maur-n [**chúgu**   =bë]   yet=n?

      Q M.-N   IRR/G.cut =3INFOR tortilla=N

      'Is it Maur who will cut the tortilla?'

    c. Á yet=n   **chúgu**   Maur=n lé=n?

      Q tortilla=N IRR/G.cut M.=N   PRO=3INAN

      'Is it the tortilla that Maur will cut?'

Participial verbs, which do not take argument clitics and which occur with verbs of motion in order to express the purpose of that motion, are only expressed with *wa*-irrealis (61a), not *g*-irrealis (61b).

(61) a. [Z- iagh =bë]   [wá-   **ya'a**].

      z- go   =3INFOR IRR/WA- dance

      'He is going to dance.'

    b. *[Z- iagh =bë]   [gú-   **ya'a**].

      z- go   =3INFOR IRR/G- dance

      'He is going to dance.'

To summarize, verbs inflected with *g*-irrealis cannot occur as the first element in a sentence, be directly adjacent to the polar question particle *á*, or occur on participial verbs. My

consultants tend to say that a construction with a sentence initial *g*-irrealis verb like (62a) is grammatical but incomplete; when asked how to complete the sentence, my consultants will add an element to the beginning of the sentence, like the preverbal adverb *nna* 'now' in (62b).

(62) a. *__Yéxa__   yag=n.

         IRR/G.fall tree=N

         'The tree will fall.'

         → Consultant's note: Grammatical but incomplete, needs something added to the beginning

     b. Nna __yéxa__   yag=n.

         now IRR/G.fall tree=N

         'The tree is on the brink of falling.'

While the judgments concerning whether a *wa*-irrealis verb may occur with a preverbal argument or constituent question word are more gradient, judgments concerning whether a *g*-irrealis verb may occur sentence-initially are categorical: they cannot.

The difference between the two kinds of irrealis marking in Lachirioag Zapotec is reminiscent of the difference that Lee (1997a, 1999, 2008) reports between the definite and irrealis aspects in Central Zapotec language San Lucas Quiaviní Zapotec (SLQZ). The irrealis aspect, in addition to expressing future events in matrix clauses, also occurs in complement clauses of intensional verbs, in embedded imperatives, and as the complement of certain modals. Verbs in the definite aspect do not allow preverbal arguments, though all other aspects do, but they do allow preverbal wh-words, and they are dispreferred or even ungrammatical with clausal negation. Lee (1997a, 1999, 2008) argues that irrealis verbs may occur with preverbal arguments but definite verbs may not because verbs inflected for these aspects occupy different positions in the syntax. VSO word order in Zapotec is argued to be derived by movement of the verb phrase to [spec, TP] after all of the arguments have already moved out of the verb phrase to positions lower than TP (Lee (1999, 2008) for SLQZ; Adler

et al. (2018) for Santiago Laxopa Zapotec (Northern)). According to Lee (1999, 2008), the focus projection has an EPP feature requiring that [spec, FocusP] is always filled, either by a focused element or by the TP. Verbs inflected for irrealis in SLQZ stay within the raised verb phrase and any focused element, like a focused argument, raises to [spec, FocusP] (63). If there is no focused element, then the entire TP raises. In other words, irrealis verbs have no effect on whether an argument can raise to the higher Focus projection.

(63) An irrealis verb allows a preverbal argument in SLQZ[8]
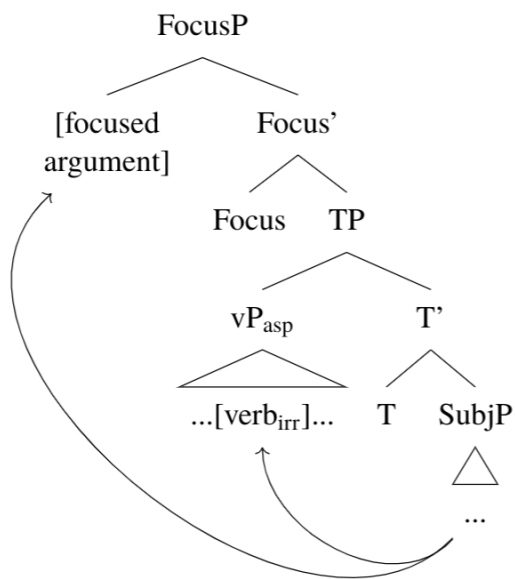
In contrast, definite verbs prevent any element from occupying [spec, FP]. This is because definite verbs assert the existence of an event, as in (64b).

(64) a. **I**-to'oh Gyeihlly ca'rr.

        irr-sell Mike   car

        'Mike will sell the car.'

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[8]The trees in (63) and (65) are adapted and simplified from Lee (1997a) and Lee (2008).

b. **S**-to'oh Gyeihlly ca'rr.

   def-sell Mike   car

   'Mike will (definitely) sell the car.'   (Lee 1997a:234)

According to Lee (1997a), while sentences with preverbal arguments express that that particular argument is salient to the discourse, sentences with a definite verb express that the entire event itself is salient. Therefore, they require that any TP containing a definite verb moves to [spec, FocusP], preventing any other focused element from occupying that position. This explains why definite verbs cannot occur with preverbal (i.e., focused) arguments but irrealis verbs can.

(65)   A definite verb requires a focused TP in SLQZ
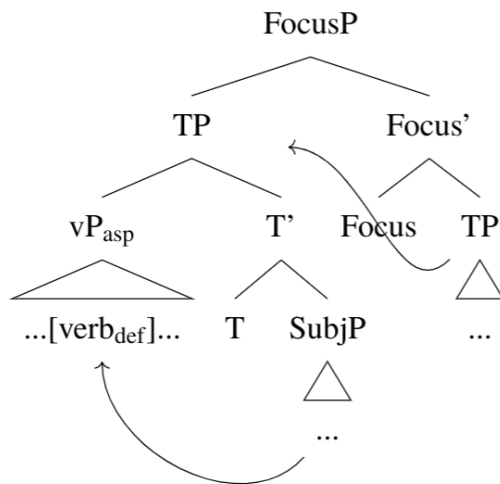
If the same analysis were applied to the two kinds of irrealis marking in Lachirioag Zapotec, *wa*-irrealis would behave like definite aspect in SLQZ: when a TP containing an irrealis verb moves to [spec, FocusP] it surfaces with *wa*-irrealis, but if it does not, it surfaces with *g*-irrealis. However, this does not seem like the best way of accounting for the *wa*-irrealis/*g*-irrealis contrast. While definite and irrealis verbs in SLQZ may both be used to refer to future events in matrix clauses, they have different semantics: irrealis verbs express

future events and definite verbs express future events that the speaker strongly believes will occur. In contrast, I have not been able to find any distinction in meaning between the two kinds of irrealis marking in SCLZ.[9] This analysis also does not explain why *wa*-irrealis verbs do not occur with constituent question words (while definite verbs in SLQZ do). Given that judgments of ungrammaticality for sentences with *wa*-irrealis verbs tend to be more gradient while they are completely categorical for sentences with *g*-irrealis verbs, it seems a little odd to treat *g*-irrealis as the "elsewhere" irrealis allomorph. Additionally, it is not clear how the TP being in [spec, FocusP] could condition the appearance of the *wa*-prefix on the verb, given that the verb phrase is in the specifier of the TP, which is in the specifier of FocusP; generally, allomorphy is conditioned by close by morphosyntactic or phonological information (Bobaljik 2000).

Another possibility is that *g*-irrealis only occurs in embedded clauses, and that all preverbal elements save the polar question marker *á* involve clefting. Lee (1997b) argues for SLQZ that preverbal focused elements that are preceded by the focus marker *lààa'*[10] are clefts; *lààa'* functions as the predicate of the matrix clause, which takes two arguments: the clefted element and a relative clause (66). The focus particle is also used as the base of independent second- and third-person pronouns (67).

(66) **La:a:a'** Gyeihlly [$_{RC}$ b-dauhw comiied]
    focus   Mike   perf-eat food

    'It's Mike who ate the food.'   (Lee 1997b:245, bolding and brackets mine)

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[9]My English-speaking consultants do consistently translate *wa*-irrealis verbs with the future modal *will* and the *g*-irrealis with the periphrastic future construction *be going to*, but the reasoning behind this is unclear, since my consultants generally give negative or ambivalent answers when asked if they feel there is a meaning difference between the two forms. One possibility is that the correlation between the *wa*-irrealis and the English modal *will* is due to their phonological similarity.

[10]*Lààa'* is how *la:a:a'* is written in the currect SLQZ orthography (Pamela Munro, p.c.).

(67) **La'a**nng ca-nzàa-ng   Meijy
      3s.prox   prog-visit-3s.prox Mexico

      'HE is visiting Mexico.'   (Lee 2008:23, bolding mine)

SLQZ also has a series of third-person independent subject pronouns formed with the base *a*. When these pronouns appear preverbally, they do not cooccur with a corresponding postverbal clitic (68), while *la*-based independent pronouns do (67). Preverbal *a*-based subject pronouns are not considered to be involved in cleft constructions.

(68) **A'a**nng ca-nzàa   Meijy
      3s.prox   prog-visit Mexico

      'He is visiting Mexico.'   (Lee 2008:23, bolding mine)

The cognate of *làaa'* in Lachirioag Zapotec is *lé*, which is used to form independent third-person pronouns (section 4.1) and does not function as a focus marker for preverbal non-pronominals. However, all preverbal subject arguments in Lachirioag Zapotec occur with a corresponding argument clitic on the verb, whether they are pronominal (69a) or not (69b). The fact that preverbal pronominal and non-pronominal arguments behave like *la*-based pronouns in SLQZ, which involve clefting, suggests that all preverbal arguments are formed via clefting in Lachirioag Zapotec.

(69) a. Lé=bë   [g-   **áu** *(=bë)]   ză.
          PRO=3INFOR IRR/G- eat   =3INFOR   beans
          'He will eat beans.'

      b. Kul [g-   **áu** *(=bë)]   ză.
          K.   IRR/G- eat   =3INFOR   beans
          'Kul will eat beans.'

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If a clefting analysis can be extended to all preverbal elements (excluding the question particle *á*), then the distribution of the two kinds of irrealis marking is explained by the fact that *g*-irrealis only occurs on embedded irrealis verbs, while *wa*-irrealis occurs elsewhere.

2.5 The perfective and the irrealis

2.5.1 Imperatives prefixes

Both the perfective and *g*-irrealis prefixes are used in imperative constructions. The perfective is used in positive singular commands (70, 71). What distinguishes the positive singular imperatives in (70b, 71b) from the simple perfective clauses in (70a, 71a) is that the imperatives lack the second-person singular argument clitic =*u*. The lack of subject clitic affects the form of the verb as well; the vowel of the verb *djze* 'fly' changes from *e* to *i* when it occurs with the second-person singular clitic =*u* in the simple perfective clauses in the (a) examples, but is not changed in the imperatives in the (b) examples because the clitic is not present. However, object argument clitics may still attach to the verb, as (71b) shows.

(70) a. Gu-   **zi**   =u.

PERF/GU- fly =2SG

'You flew (e.g., with your wings).'

b. Gu-   **ze**   (*=u)!

PERF/GU- fly =2SG

'Fly!'

(71) a. B-   **zi**   =u   =ba.

PERF/B- fly =2SG =3ANIM

'You flew it (e.g., an airplane).'

b. B-   **ze** (*=u) =ba!

PERF/B- fly =2SG =3ANIM

'Fly it!'

Positive plural imperatives are expressed using the preverbal word *la*[11] and *g*-irrealis aspect (72, 73). As with positive singular imperatives, the second-person plural argument clitic does not occur in positive plural imperatives (72b, 73b), though an object argument may attach to the verb (73b).

(72) a. You=te=r   [**sé**   =r].

all=TE=2PL IRR/G.fly =2PL

'All of you will fly.'

b. La [**sé**   (*=r)]!

LA IRR/G.fly =2PL

'(You all) fly!'

(73) a. You=te=r   [gú-   **ze** =r   =ba].

all=TE=2PL IRR/G- fly =2PL =3ANIM

'All of you will fly it.'

b. La [gú-   **ze** (*=r) =ba]!

LA IRR/G- fly =2PL =3ANIM

'(You all) fly it!'

---

[11]The preverbal word *la* may be related to the third-person pronoun base *lé* and be used to force the embedding of the *g*-irrealis verb in positive plural imperatives. However, SLQZ also has a word *u'all* that precedes perfective and irrealis verbs in plural imperatives (Pamela Munro, p.c.), unrelated to the *lé*-equivalent focus marker *làày'*. So it may be that *la* in SCLZ (and *u'all* in SLQZ) is unrelated to *lé* and instead has the primary purpose of marking plurality.

Negative singular and plural imperatives are both realized with *g*-irrealis verbs. Unlike positive imperatives, second-person argument clitics must attach to the verb in negative imperatives (see the (b) examples in (74-77)). There is essentially no difference between the non-imperative negative irrealis clauses and the negative imperatives.

(74) a. Kŭ   [**sí**   =u].
          NEG IRR/G.fly =2SG
          'You will not fly.'

      b. Kŭ   [**sí**   *(=u)]!
          NEG IRR/G.fly =2SG
          '(You all) don't fly!'

(75) a. Kŭ   [**sér**   =r].
          NEG IRR/G.fly =2PL
          'You all will not fly.'

      b. Kŭ   [**sé**   *(=r)].
          NEG IRR/G.fly =2PL
          'Don't (you all) fly!'

(76) a. Kŭ   [gú-   **zi** =u   =ba].
          NEG IRR/G- fly =2SG =3ANIM
          'You will not fly it.'

      b. Kŭ   [gú-   **zi** *(=u) =ba]!
          NEG IRR/G- fly =2SG =3ANIM
          'Don't fly it!'

(77) a. Kŭ [gú- **ze** =r =ba].
        NEG IRR/G- fly =2PL =3ANIM

   'You all will not fly it.'

   b. Kŭ [gú- **ze** *(=r) =ba].
        NEG IRR/G- fly =2PL =3ANIM

   'Don't (you all) fly it!'

2.5.2 Inflectional classes

Verbs in Zapotecan languages are traditionally grouped into inflectional classes based on what perfective and irrealis prefixes they take, which is argued to be lexically determined (see Uchihara and Gutiérrez (2020) and references therein). Each of the four verb classes is associated with a certain combination of perfective and irrealis prefixes. Terrence Kaufman, who did a lot of work on historical Zapotec linguistics, reconstructs the four inflectional verb classes in Proto-Zapotec, shown in figure 2.1.

KAUFMAN'S ZAPOTEC VERB CLASSES

	Class A	Class B	Class C	Class D
Potential	*ki-*	*ki-*	*k-*	*k-*
Completive	*kwe-*	*ko-*	*ko-*	*ko-*
Replacives	No	No	No	Yes
Begin with	*u, e*	*C*	*V, C*	*V, s*

Figure 2.1: Kaufman's reconstruction of Proto Zapotec verb classes (Campbell 2011:222)

A modern example of the four inflectional class system is shown for Juchitán Zapotec (Central) in figure 2.2. The Proto-Zapotec class A completive prefix **kwe-* becomes *be=*, while all other classes occur with completive *gu=*. Classes C and D verbs undergo fortition of the initial consonant in the potential, which is a reflex of the *g=* potential marker. Class D verbs also have a replacive initial consonant. The majority of the verbs analyzed by Pérez Báez and Kaufman (2016) fall into class A (1600), while the other classes number 125

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(class B), 237 (class C), and 294 (class D). There are also a small set of verbs which alternate between classes B, C, or D and class A; Pérez Báez and Kaufman (2016) attribute this to a processes of regularization where non-class A verbs move to class A.

	CLASS A mainly transitive (incl. causatives)	CLASS B mainly intransitive	CLASS C transitive and intransitive	CLASS D transitive and intransitive
Initial segment	–C; –u, –e	–C, –V	–C, –V	–C, –V
Habitual	ri=	ri=	ri=	ri=
Completive	be=	gu=	gu=	gu=, with replacive initial consonant
Potential	gĭ=	gĭ=	gˇ=, where $g\check{} + C \rightarrow \#CC$	gˇ=, where $g\check{} + C // \rightarrow \#CC$

Figure 2.2: Juchitán Zapotec verb classes (Pérez Báez and Kaufman 2016:224)

The two allomorphs of the perfective prefix in Lachirioag Zapotec, *b-* and *gu-*, parallel the two completive markers found in Juchitán Zapotec and reconstructed for Proto-Zapotec. It is less clear how the irrealis marking in these two languages corresponds to the strategies of *g*-irrealis marking in Lachirioag Zapotec. The g-irrealis prefix surfaces as *g-* before vowel-initial stems and causative prefixes like *u-*, triggers a fortition process when it attaches to a lenis consonant-initial stem, and deletes before a fortis-initial stem like *djtas* 'sleep' (though most fortis-initial stems have an intervening causative prefix). The *y(i)-* allomorph of the *g*-irrealis prefix only occurs when there is a following front vowel. The zero segmental realization strategy could possibly be considered the counterpart of *g-*, though it does occur mostly with intransitive verbs.

It should be mentioned that the perfective prefix *gu-* and the *g*-irrealis prefix *gú-* (argued to be a combination of irrealis *g-* and causative *u-*) occur is complementary distribution. Every verb that takes *g*-irrealis *gú-* also takes perfective *b-*. It was mentioned in section 2.3 that many if not most instances of perfective *b-* prefix may occur because of additional structure between the perfective prefix and the verb stem, even if this additional structure is not overt. Often, this additional structure is actually visible with the *u-* prefix in the *g*-irrealis (78).

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(78) a. Pelz [b-   **zey** =bë]   taka=bë.
          P.   PERF/B- burn =3INFOR arm=3INFOR

          'Pelz burned his arm.'

      b. Pelz [g-   ú-   **zey** =bë]   taka=bë.
          P.   IRR/G- CAUS- burn =3INFOR arm=3INFOR

          'Pelz will burn his arm.'

A more detailed investigation of verbal inflection needs to be done at a much larger scale, but preliminary data suggests that a system of four inflectional classes may not be the best analysis of perfective and *g*-irrealis marking in Lachirioag Zapotec. This is especially true for the perfective prefix, since the choice in perfective allomorph appears to be primarily decided by whether the prefix occurs directly adjacent to the verb stem or not, rather than be lexically selected. Pérez Báez and Kaufman (2016) mention that there is a process of regularization of verbal inflection in Juchitán and other Zapotec languages; this process may be more advanced in Lachirioag Zapotec than other languages.

2.6 Incomplete motion

There is a set of movement-related verbs that appear to not require a primary TAM prefix, which all begin with *z-*. The verbs *ziagh* 'go' and *za* 'come' are shown in (79). Munro (2007) analyses this initial *z-* as an archaic prefix expressing incomplete motion, while Sonnenschein (2004) calls it a stative TAM marker in Zoogocho Zapotec.

(79) a. [Z- **iagh** =gak =e]   [wa-   **zen**] bêl.
          z-   go   =PL   =3FOR IRR/WA- hunt   fish

          'They are going to fish.'

b. [Z- **a** =gak =e] [wa- **zen**] bêl.

z- come =PL =3FOR IRR/WA- hunt fish

'They will come to fish.'

The behavior of the *z*- prefix in Lachirioag Zapotec suggests that Munro's (2007) analysis is correct. It is mildly productive in SCLZ, but its use is highly restricted. There are two cases in which it occurs: first, with verbs of motion, like in (79); second, with non-motion verbs when there is a secondary displacement prefix (80). The displacement aspects, which are discussed in more detail in section 3.1, indicate motion either away from the speaker (andative) or towards the speaker (venitive). In other words, the *z*- prefix only occurs with verbs where motion is being indicated, either by the verb root or by a secondary displacement prefix.

(80) a. Z- a- **ríd** =a'.[13]

z- AND- show =1SG

'I go and present.'

b. Z- d- **ríd** =a'.

z- VEN- show =1SG

'I come and present.'

Interestingly, the *z*- prefixed motion verbs in (79) can also occur with the continuative prefix *dj*- instead (81), and the same is true for verbs with a displacement secondary prefix (82). It is not clear how the continuative and the *z*-prefixed forms differ in meaning.

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[13]The verb *djrid* 'show, present (visually)' can be used in ditransitive constructions to mean 'show x to y' or 'introduce x to y'. When used intransitively, it means 'give a presentation'.

(81) a. [Dj-   **iagh** =gak =e]   [wa-   **zen**] bêl.

CONT- go   =PL   =3FOR   IRR/WA- hunt fish

'They go to fish.'

b. [Dj-   **a**   =gak =e]   [wa-   **zen**] bêl.

CONT- come =PL   =3FOR   IRR/WA- hunt fish

'They come to fish.'

(82) a. Dj-   a-   **ríd** =a'.

CONT- AND- show =1SG

'I go and present.'

b. Dj-   d-   **ríd** =a'.

CONT- VEN- show =1SG

'I come and present.'

CHAPTER 3

Secondary prefixes

Secondary TAM prefixes surface between the primary prefix and the verb root and they cannot occur by themselves, but must occur with a primary prefix. For example, the repetitive secondary prefix *a-* obligatorily occurs with a primary prefix like perfective *b-* in (83).

(83) Lo telefono [*(b-) a- **ne** =bë].
      on telephone PERF/B- REP- speak =3INFOR

      'He called back on the telephone.'

There are three secondary prefixes. The first two are the andative and venitive prefixes: the andative prefix indicates movement away from the speaker (84a) and the venitive prefix indicates movement towards the speaker (84b). The final prefix, repetitive, serves a variety of functions, but often indicates a repetition of the action of the verb, as in (84c).

(84) a. Y- a- **tas** =bë.
          PERF- AND- sleep =3INFOR

          'She went and slept.'

      b. B- d- **tas** =bë.
          PERF/B- VEN- sleep =3INFOR

          'She came and slept.'

      c. B- a- **tas** =bë.
          PERF/B- REP- sleep =3INFOR

          'She slept again.'

The andative and venitive prefixes, grouped together under the category of "displacement" prefixes, are discussed in section 3.1. The repetitive prefix is the focus of section 3.2. Section 3.3 examines several cases where it is ambiguous whether it is the andative or repetitive secondary prefix that is attached to a verb, and other instances where the repetitive prefix is used to indicate something besides repetition.

3.1   Displacement prefixes

The two displacement prefixes are found throughout the Zapotecan family.[1] The andative prefix indicates the displacement of the verb's action away from the location of the speaker. An andative verb can occur with a distal demonstrative (85a), but cannot cooccur with a proximate demonstrative (85b).

(85)   a.   Na   [y-   a-   **tás**   =a'].
         there   PERF-   AND-   sleep   =1SG

         'I went and slept there.'

    b. *Nga   [y-   a-   **tás**   =a'].
         here   PERF-   AND-   sleep   =1SG

         'I went and slept here.'

The venitive prefix, in contrast, indicates the displacement of the verb's action towards the location of the speaker, and while it cannot occur with a distal demonstrative (86a), it can occur with a proximate demonstrative (86b).

(86)   a. *Na   [b-   d-   **tás**   =a'].
         there   PERF/B-   VEN-   sleep   =1SG

         'I came and slept there.'

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[1] The term "displacement prefix" comes from Butler's (1980) *aspectos de desplazamiento* 'aspects of displacement'.

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b. Nga [b-   d-   **tás** =a'].

   here PERF/B- VEN- sleep =1SG

   'I came and slept here.'

It has been noted for many other Zapotec languages that there is a relation between the andative and venitive morphemes and verbs meaning 'go' and 'come', respectively (e.g., Avelino Becerra 2004; Sonnenschein 2004). This relation exists in SCLZ as well; table 3.1a shows the similarities between the andative prefixes and the verb *ziagh* 'go' and table 3.1b does the same between the venitive prefixes and the verb *djid* 'come'.

	AND-'show'	*ziagh* 'go'
PERF-	y-a-rid[2]	gu-yiagh
CONT-	dj-a-rid	dj-iagh
Z-	z-a-rid	z-iagh
IRR/G-	sh-á-rid	sh-íagh

(a) Andative prefixes and the verb 'go'

	VEN-'show'	*djid* 'come'
PERF-	b-d-rid	b-id
CONT-	dj-d-rid	dj-id
Z-	z-d-rid	-
IRR/G-	yí-d-rid	yíd

(b) Venitive prefixes and the verb 'come'

Table 3.1: Relation between the displacement aspects and verbs of motion

The two displacement prefixes occur with specific, invariable perfective and *g*-irrealis prefixes. The andative prefix occurs with perfective *y-* and *g*-irrealis *sh-*, while the venitive prefix occurs with perfective *b-* and *g*-irrealis *yí-*. For example, the verb *djtas* 'sleep' takes the perfective prefix *gu-* and has no segmental realization of *g*-irrealis. However, when there is an andative or venitive secondary prefix, the perfective (87) and *g*-irrealis (88) primary prefixes change to the allomorphs selected for by the secondary displacement prefixes.

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[2]Interestingly, in Zoogocho and Yatzachi Zapotec, the andative prefix is the uvular fricative and the perfective marker used with it is a null prefix ∅- (Butler 1980; Sonnenschein 2004). Considering the fact that *ziagh* 'go' has a final uvular consonant, it may be that something similar is the case in SCLZ as well, or at least was so historically.

(87)   a.   Gu-   **tas**   =ba.

              PERF/GU-   sleep   =3ANIM

              'It slept.'

       b.   Y-   a-   **tas**   =ba.

              PERF-   AND-   sleep   =3ANIM

              'It went and slept.'

       c.   B-   d-   **tas**   =ba.

              PERF-   VEN-   sleep   =3ANIM

              'It came and slept.'

(88)   a.   Na   [**tás**   =ba].

              there   IRR/G.sleep   =3ANIM

              'It will sleep there.'

       b.   Na   [sh-   á-   **tas**   =ba].

              there   IRR/G-   AND-   sleep   =3ANIM

              'It will go and sleep there.'

       c.   Nga   [yí-   d-   **tas**   =ba].

              here   IRR/G-   VEN-   sleep   =3ANIM

              'It will come and sleep here.'

In general, only one primary prefix and one secondary prefix may attach to each verb stem, but there is one construction that I have elicited where two primary prefixes cooccur. The verb in (89a) has both a *wa*-irrealis and a *g*-irrealis prefix attached to it, along with the andative secondary prefix. The sentences in (89b-d) show that the *wa*-irrealis prefix cannot occur with any other primary prefix in an andative construction.

(89) a. Wá-   sh-   a-   **tas**   =bë.
          IRR/WA- IRR/G- AND- sleep   =3INFOR

      'He will go and sleep.'

      b. *Wá-   y-   a-   **tas**   =bë.
          IRR/WA- PERF-   AND- sleep   =3INFOR

      c. *Wá-   z- a-   **tas**   =bë.
          IRR/WA- Z- AND- sleep   =3INFOR

      d. *Wá-   dj-   a-   **tas**   =bë.
          IRR/WA- CONT-   AND- sleep   =3INFOR

As I argued in section 2.4, both the *wa-* and *g*-irrealis prefixes are allomorphs: *g*-irrealis surfaces on subordinate irrealis verbs, while *wa*-irrealis surfaces elsewhere. One possible explanation for the grammaticality of (89a) is that two primary prefixes may cooccur when both express the exact same aspect, which is only really possible with the irrealis prefixes. However, this does not explain why two irrealis prefixes may cooccur when there is a secondary andative prefix, but not with a secondary venitive prefix (90).

(90) *Wá-   yi-   d-   **tas**   =bë.
      IRR/WA- IRR/G- VEN- sleep   =3INFOR

      'He will come and sleep.'

Another possibility is that the prefix *sha-* is not a combination of a *g*-irrealis prefix *sh-* and the andative prefix *a-*, but is actually a single prefix that expresses andative aspect in the context of irrealis primary aspect. The andative prefix selects for a null *g*-irrealis prefix, but has no effect on the form of the *wa*-irrealis prefix.

3.2   The repetitive

Repetitive aspect is realized by the prefix *a-* between the primary prefix and the verb root. It can occur with perfective, continuative, and *g*-irrealis primary prefixes. It also appears to be able to occur with the *wa*-irrealis prefix, but there is fusion between the secondary prefix and the vowel of the primary prefix (91d). It does not seem as though the *g*-irrealis prefix is restricted to embedded clauses when it occurs with the repetitive secondary prefix, though this needs to be investigated further.

(91) a. B-   a-   **zhin** =dju.

         PERF/B- REP- arrive =1PL.INCL

         'We arrived again.'

    b. Dj-   a-   **zhin** =dju.

         CONT- REP- arrive =1PL.INCL

         'We arrive again.'

    c. G-   a-   **zhin** =dju.

         IRR/G- REP- arrive =1PL.INCL

         'We will arrive again.'

    d. Wa-   **zhin** =dju.

         IRR/WA.REP- arrive =1PL.INCL

         'We will arrive again.'

In contrast, the repetitive prefix does not seem to occur with the neutral prefix, at least overtly. It is still unclear whether the action indicated by the verb in (92b) involves the repetition indicated in (92a).

(92) a. Maur ba   [b-   a- **sezh** =bë]   yichagh Yiaghdo'.

         M.   already PERF/B- REP- unbraid =3INFOR head   Y.

         'Maur already unbraided Yiaghdo's hair.'

         ('Maur already returned Yiaghdo's hair to the state of being unbraided.')

    b. Maur ba   [n-   (*a-) **sezh** =bë]   yichagh Yiaghdo'.

         M.   already NEUT- REP- unbraid =3INFOR head   Y.

         'Maur already has Yiaghdo's hair unbraided.'

Like the displacement prefixes, the repetitive secondary prefix only occurs with specific perfective and *g*-irrealis primary prefixes: *b-* for the perfective and *g-* for the *g*-irrealis. For example, the verb *djaw* 'eat' takes the perfective prefix *gu-*, but *gu-* becomes *b-* when it occurs with repetitive *a-* (93b); the perfective prefix *gu-* cannot occur with the repetitive prefix (93c). The verb *djwaw* 'feed' inflects for *g*-irrealis with the prefix *gú-* and the verb *djzed* 'learn' has no segmental realization of *g*-irrealis; both of these verb express *g*-irrealis with the prefix *g-* when it cooccurs with the repetitive secondary prefix (94, 95).

(93) a. Gu-   **daw** =bë.

         PERF/GU- eat   =3INFOR

         'She ate.'

    b. B-   a- **daw** =bë.

         PERF/B- REP- eat   =3INFOR

         'She finished eating.'

    c. *Gu-   a- **daw** =bë.

         PERF/GU- REP- eat   =3INFOR

         'She finished eating.'

(94) a. Maria [gú- **waw** =bë =ba].

M. IRR/G- feed =3INFOR =3ANIM

'Maria will feed it.'

b. Maria [g- á- **waw** =bë =ba].

M. IRR/G- REP- eat =3INFOR =3ANIM

'Maria has already gone to feed it.'

(95) a. Maria [**zéd** =bë].

M. IRR/G.learn =3INFOR

'Maria will learn.'

b. Maria [g- á- **zed** =bë].

M. IRR/G- REP- learn =3INFOR

'Maria will re-learn.'

The repetitive prefix may be used to derive new words. The verb *djared* 'read' is the repetitive of *djred* 'see' (96); *djara* 'return (intr.)' is the repetitive of *djra* 'come' (97); and *djanezhagh* 'return (tr.)' is the repetitive of *djnezhagh* 'give' (98).

(96) a. [B- **réd** =a'] yish=n.

PERF/B- see =1SG paper=N

'I saw the book.'

b. [B- a- **réd** =a'] yish=n.

PERF/B- REP- see =1SG paper=N

'I read the book.'

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(97) a. [B-   **rá**]   nga.
          PERF/B- come/1SG here

          'I arrived here.'

      b. Ba   [b-   a- **rá**].
          already PERF/B- REP- come/1SG

          'I already returned.'

(98) a. [B-   **nezhagh** =a'] Maur to   lap.
          PERF/B- give   =1SG M.   one pencil

          'I gave Maur a pencil.'

      b. [B-   a- **nezhagh** =a'] lap   che Maur.
          PERF/B- REP- give   =1SG pencil of M.

          'I returned Maur's pencil.'

The verb 'see' is always interpreted as 'read' when it occurs with the repetitive prefix. In order to convey the meaning of 'see again', *yito* 'again' must be used with non-repetitive 'see' (99).

(99) a. [B-   **réd** =a'] benne=n (yito).
          PERF/B- see =1SG person=N again

          'I saw the man (again).'

      b. *[B-   a- **réd** =a'] benne=n (yito).
          PERF/B- REP- see =1SG person=N again.

          'I saw the man.' (Could mean: 'I read the man (again).')

The repetitive prefix may sometimes enforce a habitual interpretation when it occurs with a continuative primary prefix, as is the case for the verbs in (100). It is still not clear

why this occurs for some verbs and not for other verbs like *djzhin* 'arrive' (101), though it likely has something to do with the situation aspect of the verb phrase.

(100) a. Dj-   a-   **waw** =bë   =ba.
          CONT- REP- feed =3INFOR =3ANIM

          'She feeds it (regularly).'
          *'She feeds it again.'

     b. Dj-   a-   **ze** =bë   =ba.
          CONT- REP- fly =3INFOR =3ANIM

          'She flies it (regularly).'
          *'She flies it again.'

(101) Dj-   a-   **zhin** =bë.
       CONT- REP- arrive =3INFOR

       'She arrives again.'
       *'She arrives (regularly).'

Clearly, the repetitive prefix does not always convey a repetitive meaning. Not only does it indicate a habitual action with some verbs, as in (100), but the following section presents examples where it may indicate the completion of an action instead. However, I refer to this secondary prefix as the repetitive prefix as it seems to indicate repetitive action more often than anything else.

3.3   *A*-mbiguity

Oftentimes when the secondary prefix *a-* is used to indicate repetition of an action, my consultants prefer the verb to occur with the adverb *yito* 'again'. For some verbs like *djzhin* 'arrive' this is not necessary (102). However, for other verbs like *djze* 'hang, fly', the repetitive prefix must occur with *yito* 'again' (103).

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(102) [G-   á-   **zhin** =bë]   (yito).

IRR/G- REP- arrive =3INFOR   again

'She will arrive.'

(103) [G-   á-   **ze**   =bë   =n]   *(yito).

IRR/G- REP- hang   =3INFOR =3INAN again

'She will hang it again.'

→ Consultant's note: it is unclear what *gazebën* would mean without *yito*

A possible reason for the preference for the repetitive secondary prefix to cooccur with *yito* 'again' is that the repetitive prefix has multiple possible interpretations. It can indicate repetition of an action (104a), habitualness of an action (104b), or completion of an action (104c). My consultants may use *yito* 'again' in order to disambiguate between all of the possible interpretations of the repetitive prefix, and to make it clear that they wish to indicate repetition of the action.

(104) a. Dj-   a-   **chiagh** =bë   =ba.

CONT- REP- tie   =3INFOR =3ANIM

'She is tying it up again.'

b. Dj-   a-   **waw** =bë   =ba.

CONT- REP- feed   =3INFOR =3ANIM

'She feeds it (regularly).'

c. Dj-   a-   **daw** =bë.

CONT- REP- eat   =3INFOR

'She is finishing up eating.'

For a small set of verbs, the use of the repetitive prefix indicates the completion of the action. This is the only interpretation the repetitive prefix has with the verbs *djaw* 'eat' and *djia*

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'drink' regardless of the primary prefix (105). The verb *djat* 'die' allows both a repetitive and completion interpretation when it is inflected for perfective repetitive (106a), but only the completion interpretation when inflected for continuative repetitive (106b).

(105) Dj-   a-   **daw** =bë.
    CONT- REP- eat   =3INFOR

    'She is finishing eating.'
    'She eats again.'/'She eats regularly.'

(106) a. B-   a-   **dat** =bë.
     PERF/B- REP- die   =3INFOR

     'She died again.'/'She finished dying.'

    b. Dj-   a-   **dat** =bë.
     CONT- REP- die   =3INFOR

     'She is on the brink of dying.'
     *'She dies again.'

Another potential source of ambiguity comes from the fact that the andative secondary prefix also has the form *a-*. In general, it is possible to distinguish between the andative and repetitive secondary aspects by the primary prefixes they occur with: the andative prefix occurs with the incomplete motion prefix *z-*, the perfective prefix *y-*, and the *g-* irrealis allomorph *sh-*, while the repetitive prefix occurs with the perfective prefix *b-*, the *g*-irrealis prefix *g-*, and does not occur with the incomplete motion prefix *z-*. However, both the andative and repetitive prefixes may occur with the continuative prefix *dj-*. The sentences in (107) each have two possible interpretations: one habitual and one andative. The habitual interpretation originates from the repetitive prefix *a-* and the andative comes from the andative prefix *a-*. The two possible meanings of the sentences in (107) are the result of the fact that the continuative-repetitive prefix combination *dj-a-* is homophonous with the continuative-andative prefix combination *dj-a-*.

(107) a. Dj-   a-   **sed**   =bë.

           CONT- REP/AND- study   =3INFOR

           'She studies (regularly); she goes to study (somewhere).'

      b. Dj-   a-   **shalagh** =ren   =bë   ren   Kul.

           CONT- REP/AND- talk   =COMIT =3INFOR with K.

           'She speaks with Kul (regularly); she goes to speak with Kul (somewhere).'

For some verbs, the *dj-a-* prefix combination has only one interpretation. For example, when the *dj-a-* prefix combination occurs with the verb *djgul* 'sing', it has a continuative-andative construction and the continuative-repetitive interpretation is not available (108a). This remains the case even when the adverb *yito* 'again' is used.

(108) a. Dj-   a-   **gul** =bë.

           CONT- AND- sing   =3INFOR

           'She goes to sing (somewhere).'
           *'She sings again.'

      b. [Dj-   a-   **gul** =bë]   yito.

           CONT- AND- sing   =3INFOR again

           'She goes to sing again.'
           *'She sings again.'

It should be mentioned that there seems to be a third verbal prefix of the form *a-*, this one an argument structure-related prefix rather than a TAM prefix. As shown in (109), the intransitive version of *bguy* 'cooked' is *badey* 'got cooked'. Teotitlán Zapotec (Central Zapotec) also has a prefix *a-* that Uchihara and Gutiérrez (2020) analyze as a detransitivizing suffix, which encodes what they call "middle" voice and is used to form anticausative (i.e., inchoative) verbs from transitive verbs. While further investigation is needed in order to tell if the *a-* prefix in (109b) has exactly the same function in Lachirioag Zapotec, these "middle"

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constructions are yet another source of ambiguity when there is a prefix *a-* attached to a verb stem.

(109) a. [B-   **guy** =bë]   ză   na.

PERF/B- cook =3INFOR beans=that

'She cooked those beans.'

b. [B-   a-   **dey**] ză   na.

PERF/B- MID?- cook beans that

'Those beans got cooked.'

In summary, the repetitive secondary prefix *a-* has three possible interpretations: it may indicate repetition, habitualness, or completion of an action depending on the verb it attaches to and the primary prefix is occurs with. The andative secondary prefix is also *a-*, and although ambiguity between these two prefixes is generally avoided because they each occur with unique primary prefix allomorphs, they may both occur with the continuative prefix *dj-*. This results in ambiguity where a verb may either be interpreted as continuative-repetitive or continuative-andative. Additionally, there is an argument structure-related prefix *a-*, which possibly serves a detransitivizing function, that may potentially be confused for the other two *a-* prefixes.

CHAPTER 4

Argument Clitics & Plural Marking

4.1 Argument clitics

There are thirteen pronouns in Lachirioag Zapotec. First-person plural pronouns are divided into inclusive and exclusive. The third-person formal and informal pronouns are solely used to refer to people, the former when the speaker refers to someone older than themself and the latter when referring to someone the speaker's age or younger. The formal pronoun may also be used to convey respect regardless of age. The third-person animate and inanimate pronouns may be used to refer to other people in a very familiar or disrespectful and derogatory fashion. In addition, the third-person animate pronoun is generally reserved for animate, sentient beings while the third-person inanimate is used to refer to everything that does not fall into the category of sentient, though this is not always the case; it is not uncommon for my consultants to use the third-person inanimate pronoun to refer to animals, especially pets. My consultants also prefer to use the third-person animate pronoun to refer to vehicles like bicycles, buses, airplanes, cars, etc., though it is possible to use the inanimate pronoun as well. In contrast, robots and artificial intelligence fall into the the third-person inanimate category. Each pronoun in SCLZ has a dependent and an independent form, which are given in table 4.1.

The dependent forms given in table 4.1a are argument clitics that attach to verbs, inalienably possessed nouns, quantifiers, and some prepositions. The independent forms are given in table 4.1b. There is dialectal variation in the form of the independent second-person plural pronoun: speakers of SCLZ-A have the *ré'r* version, while speakers of SCLZ-O use *ré'* instead.

	Singular	Plural
1INCL	=a'	=dju
1EXCL		=tu
2	=u	=r
3FOR	=(g)e	=gake
3INFOR	=bë	=gakbë
3ANIM	=ba	=gakba
3INAN	=n	=gakn

(a) Dependent pronouns

	Singular	Plural
1INCL	nada'	djo'
1EXCL		netu
2	rè	ré'(r)
3FOR	lége, lí	légake
3INFOR	lébë	légakbë
3ANIM	léba	légakba
3INAN	lén	légakn

(b) Independent pronouns

Table 4.1: Lachirioag Zapotec pronouns

The first-person exclusive and third-person independent pronouns are formed by the corresponding clitics attaching to a pronominal base: *nad-/net-* for first-person,[1] excluding first-person plural inclusive, and *lé-* for third-person. Evidence for the bimorphemic status of these pronouns, and for the monomorphemic status of 1PL.INCL and the 2SG independent pronouns, is found in the distribution of the restrictive adverbial clitic *=z* 'just, only'. When this clitic attaches to an independent pronoun formed from a pronominal base and an argument clitic, it always attaches to the left of the clitic (110) (Liu 2021).

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[1]In Zoogocho Zapotec, the first-person exclusive independent pronouns corresponding to SCLZ's *nada'* and *netu* are *neda'* and *neto*, respectively (Sonnenschein 2004). While I am unsure whether these pronouns can be bisected by an adverbial clitic in Zoogocho as they can be in SCLZ, the fact that they both take the form of [*ne* + alveolar stop + corresponding dependent form] suggests that these two pronouns are formed from the same pronominal base, or at least were historically.

(110) Interaction of restrictive clitic -*z* and independent pronouns

		Pronoun	With clitic
a.	1PL.INCL	djo'	djo'=**z**
b.	1SG	nada'	nad=**z**=a'
c.	1PL.EXCL	netu	net=**z**=tu
d.	2SG	rè	rè=**z**
e.	2PL	ré'(r)	ré'=**z**(=r)
f.	3FOR	lége	lé=**z**=e
g.	3INFOR	lébë	lé=**z**=bë
h.	3ANIM	léba	lé=**z**=ba
i.	3INAN	lén	lé=**z**=n

The data in (110) shows that both the 1PL.INCL *djo'* and the 2SG *rè* are not formed with their corresponding argument clitics =*dju* and =*u*, though the two forms of the 1PL.INCL pronoun are likely related because of their phonological similarity. However, for speakers of the SCLZ-A dialect, it is clear that their 2PL independent pronoun *ré'r* is also bimorphemic because the clitic =*z* surfaces between *ré'* and the 2PL argument clitic =*r* (110e). The base for this pronoun, which is likely involved in the formation of the 2SG independent pronoun *rè* as well, is slightly more difficult to determine because it involves a change in tone.

4.1.1 Interaction between verb-final uvular consonants and subject clitics

There are three vowel-initial argument clitics in SCLZ: first-person singular =*a'*, third-person formal =*e*, and second-person singular =*u*. When the first two attach to a verb root that ends with a uvular consonant, the verb-final uvular becomes a lenis velar stop [g] (111a,b).[2] When the second-person singular clitic =*u* attaches to a uvular-final verb stem, neither it nor the uvular are pronounced, though the presence of the uvular is still heard in the effect

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[2]The fact that the final uvular consonant is pronounced as a lenis velar here suggests that Avelino Becerra's (2004) analysis of the uvular fricative in Yalálag Zapotec as an allophone of /g/ is perhaps also applicable to SCLZ.

it has on the preceding vowel (111c).[3] When a consonant-initial argument clitic attaches to a uvular-final verb stem, the uvular consonants is again not obviously articulated (111d).

(111) a. [Dj-   **shalagh** =a']   ren Maur.
           CONT- talk   =1SG with M.
           'I am talking with Maur.'

       b. [Dj-   **shalagh** =e']   ren Maur.
           CONT- talk   =3FOR with M.
           'He is talking with Maur.'

       c. [Dj-   **shala(gh)**] ren Maur.
           CONT- talk/2SG   with M.
           'You are talking with Maur.'

       d. [Dj-   **shala(gh)** =bë]   ren Maur.
           CONT- talk   =3INFOR with M.
           'He is talking with Maur.'

At first it may appear that there is a (perhaps epenthetic) [g] that appears between the first-person singular and third-person formal argument clitics when they attach to an [a]-final verb stem.[4] However, when they attach to an actual [a]-final verb stem (e.g., *za* 'come'), all three vowel-initial clitics display entirely different behavior. The first-person singular *=a'* and third-person formal *=e* replace the final vowel of the verb stem (or possibly fuse with it, in the case of the first-person singular clitic) and the second-person singular clitic *=u* fuses with the vowel of the verb and lowers to [o] (table 4.2).

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[3]There could actually be uvular articulation here, it is just very difficult to tell over Zoom, which is how the majority of this data was collected.

[4]There is an epenthetic [g] that may be inserted at the beginning of vowel-initial words in Yalálag Zapotec (Avelino Becerra 2004:107).

djshalagh 'talk'	*za* 'come'	
dj-shalagh=a'	z-a'	=1SG
dj-shalagh=∅	z-o	=2SG
dj-shalagh=e	z-e	=3FOR

Table 4.2: Behavior of vowel-initial clitics with uvular- and non-uvular-final verbs

There are two forms of the third-person formal independent pronoun: *lí* and *lége*. There seems to be no difference between the *lí* and *lége* forms of the pronoun and my consultants vary between them freely. Generally, when the 3FOR clitic =*e* attaches to an [e]-final stem, the two vowels coalesce and raise to [i] (112, 113). This process derives the 3FOR independent pronoun *lí* (113).

(112) a. *che* 'of' + =*e* (3FOR) → *chi*

  b. Maur [dj- **wau** =we] beku chi.
     M. CONT- eat =3FOR dog of/3FOR
     'Maur is feeding his dog.'

(113) a. *lé* (pronominal base) + =*e* (3FOR) → *lí*

  b. [B- **xhizh** =dju] lí.
     PERF/B- laugh =1PL.INCL 3FOR
     'We laughed at him.'

Why the third-person formal independent pronoun may also occur as *lége* is more unclear. The appearance of the [g] between the pronominal stem *lé* and the 3FOR clitic suggests that the pronominal stem underlyingly ends in a velar (or uvular) consonant. If this final consonant is sometimes elided, allowing the vowels of the pronominal base and the clitic to coalesce and raise, then this explains why there are two forms of the same pronoun. However, a [g] consonant also occurs when the 3FOR clitic attaches after another, vowel-final clitic (see

figure 4.1). So it seems likely that the 3FOR clitic actually has two forms: =*e* and =*ge*, the second of which (sometimes) occurs when the clitic attaches to a vowel-final stem. The [g] that appears with the first-person singular clitic, on the other hand, only occurs when the clitic attaches to a uvular-final verb, so there is no evidence to support a =*ga'* allomorph of the first-person singular clitic.

4.2 Cooccurrence restrictions on clitics

4.2.1 Coreferential independent and dependent forms

Whenever there is a preverbal third-person argument, a coreferential pronominal obligatory occurs postverbally as well. In (114a), the preverbal subject *be'e* 'air, wind' is matched by the third-person inanimate clitic =*n*. In (114b), the preverbal object *port nga* 'this door' is matched by the third-person inanimate pronoun *lén*.

(114) a. Be'e [b-   **seyo** *(=n)]   port nga.
         air   PERF/B- close =3INAN door that
         'It was the wind that closed this door.'

     b. Port nga [b-   **seyo**] be'e *(lé=n).
        door this PERF/B- close air   PRO=3INAN
        'It was this door that the wind closed.'

However, when an independent nominal argument occurs postverbally, it cannot be matched by a coreferential argument clitic on the verb. This is true for both subjects (115a) and objects (115b), despite the fact that, in principle, it is possible for multiple argument clitics to attach to the same verb and the clitic combination of 3INFOR-3INAN in (115b) is allowed by the clitic hierarchy restriction discussed in the following section.

(115) a. [B-   **seyo** (*=bë)]   lé=bë/Maur   port nga.

PERF/B- close =3INFOR PRO=3INFOR/Maur door this

'He/Maur closed this door.'

b. [B-   **seyo** =bë   (*=n)]   lé=n/port   nga.

PERF/B- close =3INFOR =3INAN PRO=3INAN/door this

'He closed it/this door.'

The situation is different for first- and second-person arguments. When there is a pre-verbal first- or second-person subject, it is obligatorily matched by a coreferential argument clitic on the verb (116a, 117a). When there is a preverbal first- or second-person object, however, it cannot be matched by a coreferential postverbal pronominal (116b, 117b).

(116) a. Nada=n [b-   **xhízh** *(=a')].
           1SG=N   PERF/B- laugh =1SG

'I laughed.'

b. Nada=n [b-   **xhizh** =bë]   (*nada).
           1SG=N   PERF/B- laugh =3INFOR 1SG

'He laughed at me.'

(117) a. Rè=n   [b-   **xhizh** *(=u)].
           2SG=N PERF/B- laugh =2SG

'You laughed.'

b. Rè=n   [b-   **xhizh** =bë]   (*rè).[6]
           2SG=N PERF/B- laugh =3INFOR 2SG

'He laughed at you.'

When there is a independent first- or second-person pronoun in a postverbal position, it is obligatorily matched by a coreferential argument clitic (118). This possibility of having a coreferential first- or second-person clitic and postverbal pronoun is not found with third-person arguments.

(118) a. [B-   **xhízh** *(=a')] nada lé=bë.

       PERF/B- laugh =1SG   1SG   PRO=3INFOR

       'I laughed at her.'

   b. [B-   **xhizh** *(=u)] rè   lé=bë.

       PERF/B- laugh =2SG   2SG   PRO=3INFOR

       'You laughed at her.'

4.2.2   Subject and object clitics

More than one argument clitic can attach to a verb stem, but there are restrictions in the co-occurrence of subject, object, and indirect object argument clitics. The matter of the plural marker =*gak* is set aside for this section, but will be discussed in section 4.3.

A table showing the possible combination of subject and object clitics is given below. No first-person or second-person objects can appear as argument clitics, which is the case for other Northern Zapotec languages as well (Sonnenschein 2004; López and Newberg 1990; Butler 1980). For third-person object clitics, there is a hierarchy determining what subject clitics they can occur with (119). A subject-object clitic combo is allowed if the subject clitic is at least one step above the object clitic on the hierarchy. The exact same pattern is found in Yalálag Zapotec (Avelino Becerra 2004; López and Newberg 1990).

(119)   Argument clitic hierarchy: 1/2 ≫ 3FOR ≫ 3INFOR ≫ 3ANIM ≫ 3INAN

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[6]According to one of my consultants, constructions like (117b), with the second-person singular pronoun *rè* occurring both pre- and postverbally, are used by some women in very casual speech in order to be specific about the person they are addressing.

	Object:								
	1SG	**1PL.INCL**	**1PL.EXCL**	**2SG**	**2PL**	**3FOR**	**3INFOR**	**3ANIM**	**3INAN**
1SG	–	–	–	–	–	=a=ge; =e	=a=bë	=a=ba	=a=n
1PL.INCL	–	–	–	–	–	=dju=we	=dju=bë	=dju=ba	=dju=n
1PL.EXCL	–	–	–	–	–	=tu=ge	=tu=bë	=tu=ba	=tu=n
2SG	–	–	–	–	–	=u=ge	=u=bë	=u=ba	=u=n
2PL	–	–	–	–	–	=rë=we	=rë=bë	=rë=ba	=rë=n
3FOR	–	–	–	–	–	–	=(g)e=bë	=(g)e=ba	=e=n
3INFOR	–	–	–	–	–	–	–	=bë=ba	=bë=n
3ANIM	–	–	–	–	–	–	–	–	=ba=n
3INAN	–	–	–	–	–	–	–	–	–

Figure 4.1: Allowed subject-object clitic combinations

In cases where a subject-object clitic pair is not allowed, the object surfaces as an independent argument instead (120). When a verb takes multiple arguments, the argument closest to the verb will always be interpreted as the subject. When one argument surfaces as a clitic and the other as an independent pronoun, like in (120b), the clitic argument must be the subject. Disallowed clitic combinations cannot be repaired by changing the order of the subject and object clitics because doing so would change which argument is interpreted as the subject (121).

(120)   a. *B-   **xhizh** =bë   =a'.
            PERF/B- laugh   =3INFOR =1SG
            'He laughed at me.'

    b. [B-   **xhizh** =bë]   nada.
        PERF/B- laugh   =3INFOR 1SG

(121)   a.# [B-   **xhizh** =a']   lé=bë.
            PERF/B- laugh   =1SG PRO=3INFOR
            Intended: 'He laughed at me.' (ok as: 'I laughed at him.')

b.#B-   **xhizh** =a   =bë.

PERF/B- laugh   =1SG =3INFOR

Intended: 'He laughed at me.' (ok as: 'I laughed at him.')

When a subject-object clitic pair is allowed, it is marginally possible for the object to surface as a post-verbal independent pronoun instead, though there is variation within my consultants as to how acceptable a construction like (122b) is. It is never possible for both the subject and object to surface as postverbal independent pronouns (122c).

(122) a. B-   **xhízh** =a'   =bë.

PERF/B- laugh   =1SG =3INFOR

'I laughed at her.'

b. ?[B-   **xhízh** =a']   lé=bë.

PERF/B- laugh   =1SG PRO=3INFOR

c. *[B-   **xhizh**] nada' lé=bë.

PERF/B- laugh   1SG   PRO=3INFOR

When the third-person human formal clitic attaches to an [a]-final stem, it may either surface in its consonant-initial form or the consonant is dropped and the clitic's vowel entirely replaces the final [a]. This leads to two possible ways for a 1SG-3FOR clitic pair to surface. The two clitics may both surface overtly (123a), or the 3FOR clitic may replace the 1SG clitic (123b). In the latter scenario, the verb retains the high tone associated with the 1SG clitic; this is what distinguishes the 1SG-3FOR construction like (123b) from a simple 3FOR subject clitic construction like (124).

(123) a. B-   **xhízh** =a   =ge.

PERF/B- laugh   =1SG =3FOR

'I laughed at him.'

    b. B-   **xhízh**   =e.

        PERF/B- laugh/1SG =3FOR

(124) B-   **xhizh** =e.

       PERF/B- laugh =3FOR

       'He laughed.'

4.2.3   Direct and indirect-object clitics

It is possible for the subject, direct object, and indirect object to all surface as argument clitics attached to the verb (125). When this occurs, the clitics follow a strict order: the clitic closest to the verb stem is interpreted as subject, the clitic directly following the subject clitic is the indirect object, and the outermost clitic is interpreted as the direct object. S-DO-IO clitic order is not possible.

(125) B-   **ríd** =a   =bë   =ba.[8]

       PERF/B- show =1SG =3INFOR =3ANIM

       'I showed it to her.'

       *'I showed her to it.'

DO-IO clitic combos follow the same restrictions as the S-DO combos: the direct object must be at least one step higher on the clitic hierarchy than the indirect object. Otherwise, one of the non-subject arguments must surface as an independent pronoun instead. This can be either the direct object (126b) or the indirect object (126c).

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[8]The ditransitive examples given in this section were elicited in the context of showing photos to other people or their pet(s).

(126) a. *B-   **ríd** =a   =ba   =bë.
          PERF/B- laugh =1SG =3ANIM =3INFOR

          'I showed her to it.'

    b. [B-   **ríd** =a   =ba]   lé=bë.
          PERF/B- laugh =1SG =3ANIM PRO=3INFOR

    c. [B-   **ríd** =a   =bë]   lé=ba.
          PERF/B- laugh =1SG =3INFOR PRO=3ANIM

The sentences in (126b) and (126c) are actually ambiguous. As was mentioned in section 1.4.1, when at least one of the object arguments in a ditransitive construction is expressed as an independent argument, the direct and indirect objects may occur in either order, which means that each sentence in (127) has two possible interpretations. The example in (127a) shows this effect in a sentence where both object arguments are independent pronouns and the example in (127b) shows that the same occurs when one of the object arguments is an argument clitic.

(127) a. [B-   **ríd** =a']   djo'   lé=n.
          PERF/B- show =1SG 1PL.INCL PRO=3INAN

          'I showed it to us.'/'I showed us to it.'

    b. [B-   **ríd** =a   =ba]   netu.
          PERF/B- show =1SG 1PL.EXCL PRO=3INAN

          'I showed us to it.'/'I showed it to us.'

The 3FOR clitic can replace a 1SG subject clitic when it expresses an indirect object or a direct object (128).

(128)   [B-   **ríd**   =e]   nada'.
        PERF/B- show/1SG =3FOR 1SG

        'I showed myself to her.'/'I showed her to myself.'

4.3   Plural marking

Plurality is marked for the third-person by the enclitic *=gak*, which attaches to any stem that a third=person argument clitic can attach to. The position of *=gak* is strictly to the left of all argument clitics (129a), and it can never intervene between a subject and object clitic, even when it corresponds solely to the object (129b).

(129)   a.   B-   **xhizh** =gak =tu   =we.
             PERF/B- laugh   =PL   =1PL.EXCL =3FOR

             'We laughed at her.'

        b. *B-   **xhizh** =tu   =gak =e.
             PERF/B- laugh   =1PL.EXCL =PL   =3FOR

Only one instance of the plural marker *=gak* may attach to each verb stem, even when the verb has multiple third-person plural arguments. This leads to ambiguity in what argument(s) the plural marker corresponds to. In (130a), the plural marker *=gak* may correspond to both the subject and object clitics, but it may also correspond to just the subject or just the object, leading to three possible interpretations of the sentence. It is not possible to enforce a plural S-plural O interpretation by attaching *=gak* twice to the verb (130b); instead, the object has to be made an independent plural pronoun (130c).[9] As section 4.3.1 will show, all instances of *=gak* that surface to the right of the verb root must correspond

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[9]It is not always possible for a single occurrence of *=gak* to correspond to multiple arguments. What constructions allow or disallow this multiple plural correspondence depends on factors related to the clitic hierarchy, word order, etc., and are complicated enough to be the topic of a whole other thesis paper.

to different arguments.

(130) a. B-   **xhizh** =gak =bë   =n.
           PERF/B- laugh =PL   =1PL.EXCL =3FOR

           'They laughed at them.'/'She laughed at them.'/'They laughed at it.'

       b. *B-   **xhizh** =gak =gak =bë   =n.
          PERF/B- laugh =PL   =PL   =3INFOR =3INAN

          'They laughed at them.'

       c. [B-   **xhizh** =gak =bë]   lé=gak=n.
           PERF/B- laugh =PL   =3INFOR PRO=PL=3INAN

           'They laughed at them.'

Section 4.3.1 discusses when the plural marker =*gak* is or is not optional. Section 4.3.2 presents examples where =*gak* appears to mark plurality of first-person arguments.

4.3.1   The obli-*gak*-toriness of the plural marker

Plural marking is often optional in Lachirioag Zapotec, and usually is not marked on the verb if it is recoverable from context (131). However, there are sentences like those in (132), where it is ungrammatical for =*gak* not to attach to the verb. In all of the sentences given below, =*gak* marks a plural subject. When the subject is postverbal, =*gak* is optional, but when the subject is preverbal, =*gak* becomes obligatory.

(131) La [gu-   **tas**   =te (=gak)] you=te wazha'a=n.
       LA PERF/GU- sleep =TE =PL   all=TE soothsayer=N

       'All of the soothsayers immediately went to sleep.'

(132) a. You=te wazha'a=n   la [gu-   **tas**   =te *(=gak) =e].

        all=TE soothsayer=N LA PERF/GU- sleep =TE =PL   =3FOR

        'All of the soothsayers immediately went to sleep.'

    b. Maur na   Ziku [b-   **we**   *(=gak) =bë]   to   foto.

        M.   and Z.   PERF/B- look =PL   =3INFOR one photograph

        'Maur and Ziku looked at a picture.'

    c. Á Yiaghdo na   Ziku=n [b-   **pint** *(=gak) =bë]   yo=n?

        Q Y.   and Z.=N   PERF/B- paint =PL   =3INFOR house=N

        'Did Yiaghdo and Ziku paint the house?'

While two =*gak* enclitics cannot attach to the verb stem, =*gak* may appear more than once in a single clause. For example, in (133) there is one instance of =*gak* encliticized onto the verb and another instance of =*gak* in the independent plural pronoun *légake*.

(133) [B-   **xhizh** =gak =bë]   lé=gak=e.

      PERF/B- laugh   =PL   =3INFOR PRO=PL=3FOR

      'They laughed at them.'

However, when the independent plural pronoun is postverbal, the verbal enclitic =*gak* cannot also correspond to it. In (134a), the only argument available for the verbal enclitic =*gak* to correspond to is the object; =*gak* never corresponds to second-person arguments. However, the object is expressed by the independent pronoun *légake*, which already contains an instance of =*gak*. The ungrammaticality of (134a) is due to the fact that there are two instances of =*gak* to the right of the verb root that correspond to the same argument. If only one argument is plural, there can only be one instance of =*gak* in that clause (134b-d).

(134) a. *[B-   **xhizh** =gak =u]   lé=gak=e.

PERF/B- laugh =PL =2SG PRO=PL=3FOR

'You laughed at them.'

b. B-   **xhizh** =gak =u   =ge.

PERF/B- laugh =PL =2SG =3FOR

c. [B-   **xhizh** =gak =u]   lé=ge.

PERF/B- laugh =PL =2SG PRO=3FOR

d. [B-   **xhizh** =u]   lé=gak=e.

PERF/B- laugh =2SG PRO=PL=3FOR

The situation changes if an independent plural pronoun surfaces preverbally. For example, when the subject pronoun *légakbë* surfaces preverbally in (135), the plural enclitic =*gak* obligatorily surfaces on both the preverbal pronoun and on the verb stem (compare (135a) with (135b) and 135c)). When the same subject surfaces postverbally, it again becomes ungrammatical to have two instances of =*gak* (135d). If all preverbal arguments are the result of clefting (see section 2.4), then the ungrammaticality of (134a) and grammaticality of (135a) can be explained by the constraint that all instances of =*gak* within the same clause must modify different arguments.

(135) a. Lé=gak=bë   [gu-   **din** =gak =bë]   netu.

PRO=PL=3INFOR PERF/GU- hit =PL =3INFOR 1PL.EXCL

'They hit us.'

b. *Lé=gak=bë   [gu-   **din** =bë]   netu.

PRO=PL=3INFOR PERF/GU- hit =3INFOR 1PL.EXCL

c. *Lé=bë   [gu-   **din** =gak =bë]   netu.

PRO=3INFOR PERF/GU- hit =PL =3INFOR 1PL.EXCL

d. *[Gu-   **din** =gak] lé=gak=bë   netu.

PERF/GU- hit =PL   PRO=PL=3INFOR 1PL.EXCL

The distributional behavior of the plural enclitic *=gak* parallels that of third-person subjects. When a third-person pronominal subject surfaces postverbally, it can either be expressed as a verbal enclitic (136a) or as an independent nominal (136b), but not both (136c). When a third-person subject surfaces preverbally, it must be matched by a verbal enclitic (136d). Similarly, when a plural pronominal argument surfaces postverbally, *=gak* may attach to either the verb (137a) or to the independent pronoun (137b), but not both (137c). When a plural subject surfaces preverbally, *=gak* obligatorily surfaces on the verb (136d).

(136) a. Gu-   **tas**   =ba.
        PERF/GU- sleep =3ANIM

        'It slept.'

     b. [Gu-   **tas**] beku=n.
        PERF/GU- sleep dog=N

        'The dog slept.'

     c. *[Gu-   **tas** =ba]   beku=n.
        PERF/GU- sleep =3ANIM dog=N

        'The dog slept.'

     d. Beku=n [gu-   **tas**   *(=ba)].
        dog=N   PERF/GU- sleep =3ANIM

        'The dog slept.'

(137) a. [Gu-   **din** =gak =bë]   netu.

PERF/GU- hit   =PL   =3INFOR 1PL.EXCL

'They hit us.'

b. [Gu-   **din**] lé=gak=bë   netu.

PERF/GU- hit   PRO=PL=3INFOR 1PL.EXCL

'They hit us.'

c. *[Gu-   **din** =gak] lé=gak=bë   netu.

PERF/GU- hit   =PL   PRO=PL=3INFOR 1PL.EXCL

'They hit us.'

d. Lé=gak=bë   [gu-   **din** *(=gak) =bë]   netu.

PRO=PL=3INFOR PERF/GU- hit   =PL   =3INFOR 1PL.EXCL

'They hit us.'

The one difference between *=gak* and third-person enclitics comes from how they behave with postverbal, coreferential, non-pronominal subjects. There is a strict complementary distribution between enclitics and coreferential postverbal nominals (138a). In contrast, as long as it is the only instance of *=gak* corresponding to that plural argument, the verbal enclitic *=gak* may optionally surface even when there is an overtly plural postverbal nominal (138b).

(138) a. [Gu-   **tas**   (*=ba)] beku=n.
PERF/GU- sleep =3ANIM dog=N

'The dog slept.'

b. [Gu-   **tas**   (=gak)] Maur na   Ziku.
PERF/GU- sleep =PL   M.   and Z.

'Maur and Ziku slept.'

4.3.2 Variations on the first-person plural

While *=gak* overwhelmingly occurs with third-person arguments, there are a few instances where it seems to correspond to a first-person argument instead. For example, to form a sentence with the meaning 'I introduced us to them', the plural enclitic *=gak* must be attached to an independent pronoun (139a,b). It is also possible for *=gak* to be attached to both the verb and to an independent pronoun (139c).

(139) a. [B-   **ríd** =a']   netu   lé=gak=bë.
        PERF/B- show =1SG 1PL.EXCL PRO=PL=3INFOR

       'I introduced us to them.'

    b. [B-   **ríd** =a'] lé=gak=bë   netu.
        PERF/B- show =1SG PRO=PL=3INFOR 1PL.EXCL

    c. [B-   **ríd** =gak =a'] netu   lé=gak=bë.
        PERF/B- show =PL   =1SG 1PL.EXCL PRO=PL=3INFOR

There are two unusual facts about (139c). First, if the verbal enclitic *=gak* corresponds to the indirect object *légakbë*, then this is a clear contradiction to the claim made in the previous section that two instances of *=gak* in the same clause cannot correspond to the same argument. Second, *=gak* is not able to correspond to an independent IO pronoun when there is an intervening independent DO, as the following (c) examples demonstrate:

(140) a. [B-   **ríd** =a'] rè   lé=gak=ba.
        PERF/B- show =1SG 2SG PRO=PL=3ANIM

       'I showed you to them.'

    b. [B-   **ríd** =gak =a   =ba]   rè.
        PERF/B- show =PL   =1SG =3ANIM 2SG

c. *[B-   **ríd**   =gak =a']   rè   lé=ba.

PERF/B- show =PL   =1SG 2SG PRO=3ANIM

(141) a. [B-   **ríd**   =a']   nada' lé=gak=e.

PERF/B- show =1SG 1SG   PRO=PL=3FOR

'I introduced myself to them.'

b. [B-   **ríd**   =gak =e]   nada'.

PERF/B- show/1SG =PL   =3FOR 1SG

c. *[B-   **ríd**   =gak =a']   nada' lé=ge.

PERF/B- show =PL   =1SG 1SG   PRO=3FOR

The sentence in (139c) remains grammatical even if =*gak* is attached only to the verb (142), but here the meaning changes: the third-person IO must be interpreted as singular. This remains true even when the order of the IO and DO pronouns changes, which suggests that the verbal enclitic =*gak* corresponds to the 1PL.EXCL direct object *netu* rather than the third-person indirect object *légakbë* in (139c) and the sentences in (142).

(142) a. [B-   **ríd**   =gak =a']   netu   lé=bë.

PERF/B- show =PL   =1SG 1PL.EXCL PRO=3INFOR

'I introduced us to her.'

Cannot mean: 'I introduced us to them.'

b. [B-   **ríd**   =gak =a']   lé=bë   netu.

PERF/B- show =PL   =1SG PRO=3INFOR 1PL.EXCL

There is an additional case where =*gak* appears to correspond to a first-person singular clitic. The sentence in (141c), repeated below, is actually grammatical under an interpretation where I am showing multiple photos of myself to a single person. In other words, =*gak* does not correspond with the third-person indirect object (which is obligatorily interpreted as singular), but instead to the 1SG direct object.

(143) [B-   **ríd** =gak =a']   nada' lé=ge.

PERF/B- show =PL =1SG 1SG PRO=3FOR

'I showed myself to her.' (Lit. 'I showed the multiple instances of myself to her.')

The 1SG + =*gak* combination refers to a different set of multiple entities than the 1PL.EXCL or 1PL.INCL pronouns do. The 1PL.EXCL pronoun is a combination of first-person and third-person (the speaker + a number of non-speech-participants), while the 1PL.INCL pronoun is a combination of first-, second-, and possibly third-person (the speaker + the listener (+ a number of non-speech-participants)). When =*gak* corresponds with a first-person singular argument, it instead forces a reading where there are multiple instances of the speaker. This suggests that =*gak* is not an agreement marker, because it may correspond to both singular and plural pronouns. Rather, =*gak* indicates semantic plurality, which is likely why it so rarely corresponds to a first-person singular argument: there are few situations where there are multiple instances of the speaker. Rather than an agreement marker, =*gak* behaves more like a pluractional marker when it occurs on the verb (Newman 2012).

In general, =*gak* is reserved for third-person arguments. Although I have argued that it may correspond with first-person exclusive and inclusive plural arguments as well, the cases in which this is possible seem very limited; for example, it is not allowed in either of the simple sentences in (144), though it may be that the lack of context given for these sentences is the reason why my consultants judged them ungrammatical.

(144)   a.   Gu-   **tas**   (*=gak) =dju.

PERF/GU- sleep =PL   =1PL.INCL

'We (including you) slept.'

   b.   Gu-   **tas**   (*=gak) =tu.

PERF/GU- sleep =PL   =1PL.EXCL

'We (not you) slept.'

It is still unclear what exact meaning is conveyed by a first-person plural pronoun + =*gak* combination that is not already conveyed by the first-person plural pronoun itself. I have found no instances where =*gak* corresponds with a second-person argument.

CHAPTER 5

Conclusion

The verbal morphology template for SCLZ that was given in figure 1.1 is repeated in figure 5.1 below. The TAM prefixes were discussed in chapters 2 and 3. There are four primary prefixes that occur with essentially all verbs - continuative, neutral, perfective, and irrealis - and a fifth primary prefix, which indicates incomplete motion. The incomplete motion prefix only occurs with a small set of motion-related verbs and with any verb that also has a displacement secondary prefix. The three secondary prefixes are the andative, venitive, and repetitive. Chapter 4 focused on the plural marker and argument clitics. The plural marker =gak attaches before all argument clitics regardless of the argument it corresponds with. While multiple argument clitics may attach to a single verb stem, it was shown that they are governed by two restrictions. First, each subsequent clitic must be lower on the clitic hierarchy than the one to its left (see section 4.2.2). Second, the arguments must occur in a strict linear order. When there is one argument clitic attached to the verb, it is obligatorily interpreted as the subject. When there are two argument clitics attached to the verb, the one closest to the verb is obligatorily interpreted as the subject and the one to its right may be interpreted as either an indirect or direct object. When three argument clitics are attached to the verb, they obligatorily have S-IO-DO order.
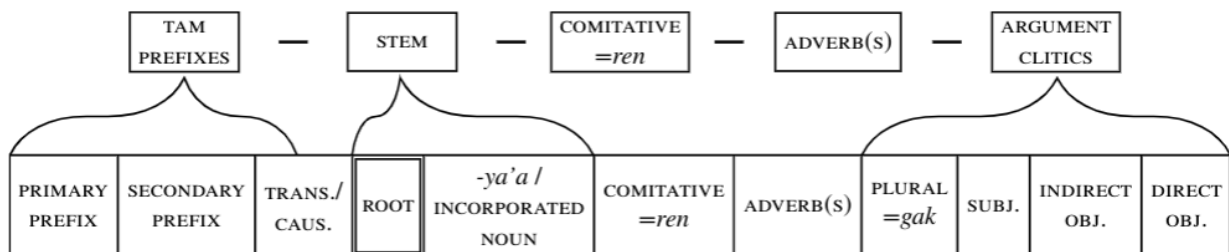

Figure 5.1: Verbal morphology template, repeated

Given that all linguistic work on Lachirioag Zapotec has only occurred over the course of the last year and a half, there are innumerable avenues for future study remaining. One area of particular interest is speakers' knowledge of the morpho-phonological processes that occur in the verbal complex. While the morphology is largely agglutinative on the right side of the verb, to the left, the language tends towards fusional. For instance, the initial consonant of *kwíagh* in (145) is a fusion of the verb root, a causative morpheme (*djbiagh* 'make fray' is the causative of *djdjiagh* 'fray'), and a *g*-irrealis prefix (whose presence can also be seen in the high tone).

(145)   Maur [dj-   **ènd**   =bë]   [**kwíagh**   =bë]   xhbe'e alfombra na.

         M.   CONT- want =3INFOR IRR/G.make.fray =3INFOR border rug   that

         'Maur wants to fray the edges of the rug.'

The behavior of pre-root morphology is generally given a diachronic explanation. Both the irrealis and one of the causative prefixes have been reconstructed to Proto-Zapotec **k-*; Operstein (2014) argues that causative **k-* is a descendant of irrealis **k-*. The combination of a **k-* prefix attached to root beginning with a singleton consonant in Proto-Zapotec is realized as a single fortis consonant in modern Zapotec (this was mentioned previously in section 2.4). Most of the causative prefixes, including **k-*, are considered non-productive in modern Zapotec in that they are not used to create new causative verbs (Operstein 2014; Operstein and Sonnenschein 2015; Uchihara and Gutiérrez 2020). Verbs borrowed from Spanish, for example, are generally used in periphrastic constructions rather than as new verb roots. SCLZ does have at least one Spanish verb borrowed as a new root, however: *djpint* 'paint', which was borrowed from *pintar* 'to paint' (146a).[1] When this verb reduces in valency, the root-initial consonant changes from fortis [p] to lenis [b] (146b).[2]

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[1]Credit to Mike Galant for first coming across this verb.

[2]This appears to be a passivization of *djpint* 'paint', but this has not yet been confirmed for certain.

(146) a. Maur [b-   **pint** =bë]   yo'   na.

          M.   PERF/B- paint =3INFOR house that

          'Maur painted the house.'

       b. Yo'   na   [b-   **bint**   =n].

          house that PERF/B- be.painted =3INAN

          'The house was painted.'

This change from *djpint* 'paint' to *djbint* 'be painted' is interesting for several different reasons. First, [p] never occurs as a word-initial consonant in native words. The fortis counterpart of initial [b] in native verbs is [kʷ], due to the causative and irrealis prefixes being *k-. There is evidence elsewhere in the language that [b] does become [p] when it undergoes fortition. In other Northern Zapotec languages like Yalálag and Zoogocho Zapotec, possession may be indicated with the prefix *xh-* (Avelino Becerra 2004; Sonnenschein 2004). This prefix usually causes a following lenis consonant to become fortis:

(147) a. Yalálag Zapotec: *be'ch* 'louse' → *x-pe'ch=a'* 'my louse'

                                                        (Avelino Becerra 2004:15)

       b. Zoogocho Zapotec: *bex* 'tomato' → *x-pex=a'* 'my tomato'

                                                        (Sonnenschein 2004:65)

The possessive prefix *xh-* is not frequently used in Lachirioag Zapotec, but it is found with a few (mainly clothing-related) words, one of them being *xhpaxha'* 'my fannypack', where the word-initial [p] is the result of fortition. The alternation of [b] and [p] in the borrowed verbs in (146) is due to the fact that *djpint* 'paint' was borrowed with non-native phonotactics, but it does bring into question the representation in the synchronic grammar of SCLZ speakers of the fortition processes involved in causative alternations.

The sentences in (148) show *djpint* 'paint' and *djbint* 'be painted' inflected for *g*-irrealis. The transitive verb takes the *gú-* prefix, which is likely a sequence of the irrealis prefix *g-*

and the causative prefix *u-* (section 2.4). The intransitive verb, however, has no segmental realization of *g*-irrealis. If there is an underlying *g-* prefix attached to the embedded verb in (148b), we might expect it to cause fortition of the initial consonant, but the intitial consonant remains lenis [b].

(148) a. Maur [dj-   **ènd** =bë]   [g-   ú-   **pint** =bë]   yo'   na.

M.   CONT- want =3INFOR   IRR/G- CAUS- paint =3INFOR house that

'Maur wants to paint the house.'

b. Maur [dj-   **ènd** =bë]   **bínt**   yo'   na.

M.   CONT- want =3INFOR   IRR/G.be.painted house that

'Maur wants the house to be painted.'

Of course, this discussion is centered around only a single borrowed verb, so nothing conclusive can be drawn about speakers' representations of primary prefix allomorphy and causativity alternations. However, these are topics that can be investigated in the future using wug-tests and other psycholinguistic methods.

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