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Rhythmic syncope and opacity in Mojeño Trinitario

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This paper presents rhythmic syncope in Mojeño Trinitario, an Arawak language spoken in lowland Bolivia. In this language, every vowel that is in a weak prosodic position can syncopate. The syncope pattern of Mojeño Trinitario is remarkable for several reasons. First, it involves a regular, categorical and complete deletion rather than a statistical reduction of vowels. Second, it applies similarly to words with either of two stress patterns: iambic words, which make up the great majority of words, and trochaic ones, much less numerous. Third, a great variety of consonant sequences are the result of syncope, and syllabification applies again after syncope. Fourth, rhythmic syncope actually underapplies: almost half of the vowels that are in a position to syncopate are maintained, and vowel quality plays a statistical role in immunity to syncope. Fifth, due to a rich morphology and a set of complex phonotactic rules applying sequentially, syncope leads to extreme opacity. The data presented in this paper in a theory-neutral way contribute to the typology of rhythmic syncope. It will also be of interest to phonologists considering constraint-based vs. derivational models of phonology.

Keywords: phonology; stress; prosody; rhythmic syncope; Mojeño (Arawak)

1 Introduction

Mojeño is an Arawak language spoken in lowland Bolivia. The Trinitario dialect shows a process of rhythmic syncope by which the vowels that are in weak prosodic positions are subject to deletion throughout the word. Since most words are iambically parsed from left to right, all odd-numbered vowels (but the final one) are generally deletable. In example (1), as in the rest of the paper, the vowels that are underlined in the underlying form are those that are actually deleted in the surface form.

(1) /sujusVtipiçenutʃojore/[1] [sjus.tip.çen.ˈʧoj.re] ‘she is going to cut (them) at the neck’

This paper, based on lexical and textual data collected in the field, presents a first overview of how rhythmic syncope works in Mojeño Trinitario. It offers new data for the typology of rhythmic syncope. Some typologically interesting aspects of Mojeño Trinitario syncope follow. First, it involves a regular, categorical and complete deletion rather than a gradient reduction of vowels. Second, the major pattern presented with example (1) is only the most regular pattern of syncope. Some words show a different

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[1] V is used in the underlying form whenever the absence of an alternate form of the root makes it impossible to identify the quality of a vowel that is posited in the underlying form.

metrical parse and therefore a different syncope pattern. Third, a great variety of consonant sequences result from syncope, and syllabification applies again after syncope. Fourth, syncope underapplies in both metrical patterns in some unpredictable ways, and to a rather high degree: slightly more than half of the eligible vowels actually syncopate. There is a statistical tendency for /i, o, u/ to undergo more frequent syncope than /a, e/. Fifth, and most remarkably, this polysynthetic language shows a high degree of morphological complexity and rich morphophonology which add to the opacity generated by the syncope process. This opacity is most obvious in the reduplication process, where on the surface, the copy is not always similar to the base (Rose 2014). Example (2) illustrates how the copy does not share a single segment with the base in the surface form: the reduplicant is /wo/, and the base is /çi:/ (more examples of opacity are offered in Section 6.5). Moreover, syncope in Mojeño Trinitario shows particularities that are not accounted for in the existing typologies of syncope, such as the deletion of the vowel of the first syllable of iambically-parsed words, and almost unrestricted combinatorics in consonant sequences. Finally, it seems a priori difficult to account for this opacity without taking into account some sequentiality, with processes applying in a fixed order.

(2) /ti̲-çiwo̲-wo-ji/ [tçiːˈwoji] 3-rain-RED-CLF ‘It is raining a lot.’

Section 2 presents the background information for this paper, firstly on the typology of syncope, secondly on the Mojeño language and its basic phonological and morphological structure. Section 3 presents the major pattern of metrically-conditioned syncope, by describing the various steps that lead from the underlying representation to the surface form in words with the most frequent metrical parse, i.e. iambic. This is not the whole story, however, since some words show a lexical stress placement based on trochaic parsing, and these also involve syncope. This second pattern is presented in Section 4. Section 5 briefly describes how syncope is regular and predictable (in terms of the metrical parse) whatever the context of utterance, as well as phonetically categorical. At the same time, it underapplies in all kinds of words, so that in fact barely half of vowels that are in weak prosodic positions do in fact delete. Finally, Section 6 describes how syncope interacts with morphophonology and leads to extreme opacity. Section 7 summarizes the basic findings about Mojeño Trinitario prosody, discusses whether they are relevant to the synchrony or diachrony of the language, and how the metrical system and the syncope pattern fit in current typologies.

The data presented in this paper in a theory-neutral way contribute to the typology of rhythmic syncope.[2] It will also be of interest to phonologists considering constraint-based vs. derivational models of phonology. A caveat is that, by taking a synchronic perspective on the Mojeño Trinitario syncope process, this paper necessarily presents the most straightforward cases and leaves aside other cases as yet unexplained exceptions (see Section 7.2). It is very likely that a diachronic study would account for a larger portion of the data, but this is far beyond the scope of the current study.

2 Background

2.1 Syncope

Syncope is understood as the deletion of a non-final vowel.[3] There are various types of syncope (Gouskova 2003). This paper essentially addresses “metrically conditioned syncope”, i.e. a process by which the properties of the metrical structure determine which vowels delete. It focuses even more specifically on “rhythmic syncope”, a process that deletes all the vowels in weak metrical positions throughout the word. Rhythmic syncope has often been accounted for within OT (Kager 1997; Gouskova 2003 inter alia), but has also been argued to be a case for intermediate representations in derivational phonology, and these two perspectives are reconciled in Harmonic Serialism (McCarthy 2008) and Stratal OT (Kiparsky 2015).

[2] Some recent talks have presented different analyses of the data, especially on reduplication (Marquardt 2018, Andersson 2019).

[3] The deletion of final vowels (apocope) is found in Mojeño Trinitario, but only optionally in rapid speech.

Rhythmic syncope is not a frequent phenomenon, but has been described in a number of languages, such as Latin (Jacobs 2004), the Chicham (a.k.a. Jivaroan) languages Aguaruna (Payne 1990; Overall 2007; McCarthy 2008) and Wampi (Peña 2015), Macushi (Abbott 1991; Kager 1997), Odawa and Ojibwe (Bloomfield 1957; Piggott 1974 [1980]), Potawotami (Lockwood 2012), Tlingit (Cable 2004), Hopi (Jeanne 1982; Hill 1998; Gouskova 2003), Southeastern Tepehuan (Willett 1982; Willett 1988; Kager 1997; Gouskova 2003), and Tonkawa (Hoijer 1933; Gouskova 2003). Another type of syncope is differential syncope (Gouskova 2003), a process that targets some vowels more than others depending on their vowel quality, and in that respect is comparable to vowel reduction (Crosswhite 2004). The sonority scale for vowels given in (3) presents vowels from the least sonorous to the most sonorous (Prince & Smolensky 1993). The scale is also expected to predict propensity to syncopate or reduce: it reads from more to less prone. On the basis of this scale, constraints may ban either sonorous vowels from non-prominent positions, or low-sonority vowels from prominent positions.

(3) Sonority scale

ə < u, i < e, o < a

Kager (1997) offers another typology of syncope, distinguishing gradient syncope from categorical syncope. Gradient syncope describes a type of syncope that is in free variation with vowel reduction and preserves syllabicity. Categorical syncope, on the contrary, has no vowel reduction counterpart and destroys syllabicity (phonology and stress are based on the output syllabification). These two typologies will be further discussed in Section 8.1, in light of the new Mojeño Trinitario data.

2.2 The Mojeño language

The Mojeño language is spoken in lowland Bolivia (Crevels & Muysken 2015) and belongs to the Arawak family (Aikhenvald 1999). Two varieties are still spoken: Trinitario (Gill 1957; 1993; Rose 2015b and other publications), and Ignaciano (Ott & Ott 1983; Olza Zubiri et al. 2002). Marbán (1702) describes an older stage of the language, spoken in the 17th and 18th centuries as the lingua franca of the Jesuit missions in the region (Saito 2009), that I call Old Mojeño. Some mansucripts from the late 19th century are also available (1898). Neither these older accounts of Mojeño nor Ignaciano show rhythmic syncope. Rhythmic syncope therefore must have developed between 1898 and 1957. The Trinitario grammar by Gill (1957) does not actually use the term syncope but accounts for this process in terms of a linear process of alternation of different classes of roots and affix allomorphs, without offering a unified account at the word level. More recent publications involve a basic (and now outdated) description of rhythmic syncope and its implications for morphosyntactic issues (Rose 2008; 2014; 2015a).

The present study is based on a corpus of Mojeño Trinitario collected in the field since 2005. It comprises audio (or video) recordings of (semi)-spontaneous texts (eight hours), sentences elicited with stimuli (two hours), and lists of isolated words. The corpus thus comprises 4920 sentences, which permitted a lexicon of 2100 roots, affixes and clitics to be established. All the data used in this paper are taken from this corpus, and are transcribed with the IPA.[4]

2.3 Mojeño phonology

The consonant inventory is the following: /p, pʲ, pʷ, t, c, k, kʲ, ʔ, ʔʲ, m, mʲ, mʷ, n, ɲ, s, sʲ, ç, h, hʲ, hʷ, t͡s, t͡sʲ, t͡ʃ, w, βʲ, j, ɾ, ɾʲ/. And the vowel inventory is the following: /i, iː, e, eː, ə͡e, ə͡eː, a, aː, u, uː, o, oː/. Some sounds like /c/ and /ə͡e/, and all the long vowels are contrastive on the surface, since they are crucial for meaning differences (4), but they are not postulated in the underlying form. /c/ and /ə͡e/ are derived from the underlying form through vowel hiatus resolution, and the long vowels are an indirect consequence of vowel syncope (de Carvalho & Rose 2018).

[4] An alphabet was created in 1995 (Fabricano Noe et al. 2003).

(4) Short V vs. long V:

a. nh**u**ko ‘I smell’
b. nh**u**:ko ‘I grow up’

Syllabification applies more than once in the phonology. As we posit underlying Mojeño forms in which vowels and consonants alternate and in which consonants never appear in final position, the first round of syllabification produces only open syllables (CV, and possible V in word-initial position). In contrast, the second round of syllabification that takes place after syncope results in a much more complex syllable structure on the surface: it can show a complex cluster word-initially, and the rhyme can be heavy (either with a long vowel or with a coda) when not word-final (5). Resyllabification will be discussed in Section 3.3.

(5) Mojeño Trinitario syllable structure

	word-initially	word-medially	word-finally
first round	(C)V	CV	CV
second round	(C)(C)V(C/:)	CV(C/:)	CV

The Mojeño Trinitario word is defined as the prosodic unit within which stress, syncope and segmental phonotactics apply. It may include, in addition to the root, one to three prefixes, and up to nine affixes and enclitics.[5] A crucial remark for this paper is that bare roots are rather rare in this agglutinating to polysynthetic language.[6] Finally, lexical roots are either bisyllabic or trisyllabic, showing two or three CV sequences, in line with the well-known requirement for a minimum of two syllables for lexical words (McCarthy & Prince 2001[1993]). The only monosyllabic words are function words – the articles, the preposition *te*, and the negative word *wo* – and arguably a few verbs, again in line with the common difference in minimal size between lexical and function words (Selkirk 2003).

3 Major pattern of stress and syncope

Syncope in Mojeño Trinitario is most obvious in different forms of the same root (6) or of the same affix or clitic (7), when found in different words. The same morpheme varies in form depending on which vowels surface, in correlation with the morpheme position within the word. (Note that the vowels that are underlined in the underlying form are those that are deleted in the surface forms.) Most words consist, on the surface, of a complex onset followed by a sequence of closed syllables, with the exception of the last (or last two) syllable(s), which remain(s) open.

(6) Iambic syncope affecting different vowels of the same root

a.	(nu̲-hu)ma	ˈnhu.ma	1SG-illness	‘my illness’
	(hu̲ma)-ɾe	ˈhma.ɾe	illness-NPSD	‘illness’
b.	(nu̲-ʧu)(nu̲si)hi	nʧun.ˈsi.hi	1SG-cushion	‘my cushion’
	(ʧu̲nu)(si̲hi)-ɾe	ʧnus.ˈhi.ɾe	cushion-NPSD	‘cushion’
c.	(nu̲-e)sane	ˈne.sa.ne	1SG-field	‘my field’
	(e̲sa)ne̲-ti	ˈʔsan.ti	field-NPSD	‘field’

[5] Clitics are defined according to the fact that they can attach to the negative auxiliary, but otherwise share their phonological behavior with affixes.

[6] Verbs indeed always take at least a prefix, and active verbs (transitive or intransitive) must additionally take an active suffix. About half of the nouns are possessible, and most of these must either take a possessive prefix, or else a suffix indicating that they are not possessed.

d.	(nu̲-e)(mo̲to)ne	nem.ˈto.ne	1SG-work	‘my work’
	(e̲mo)(to̲ne)-ko	ʔmot.ˈne.ko	work-NPSD	‘work’
e.	(su̲-no)si	ˈsno.si	3F-stay	‘she stays’
	(su̲-a)-no̲si	ˈsan.si	3F-IRR-stay	‘may she stay’
f.	(ti-ko)-huma	ˈtkoh.ma	3-VZ-illness	‘he is sick’
	(ti̲-a-)(ko̲-ju)ma	tak.ˈju.ma	3-IRR-VZ-illness	‘that she be sick’
	(ti-ku-)(ko-hu)ma	tkuk.ˈhu.ma	3-NEG.IRR-VZ-illness	‘that he is not sick’
g.	(pi̲-ko)-je̲ʔe	ˈpkoj.ʔe	2SG-VZ-possesssion	‘you have’
	(pi̲-a-)(ko̲-je)ʔe	pak.ˈje.ʔe	2SG-IRR-VZ-possesssion	‘may you have’

(7) Iambic syncope affecting different vowels of same affix or clitic

a.	(nu̲-e)(ʧo̲hi)(-ko̲-wo)(ko̲=jo)ɾe	1SG-speak-ACT-**PL.O**=FUT	‘I will speak to them’
	[ˌneʧˈhikˌwok.ˈjo.ɾe]		
	(nu̲-i)(ʧo̲-ʔo)(-wo̲ko)=jo̲ɾe	1SG-call-ACT-**PL.O**=FUT	‘I will call them’
	[niʧˈʔow.ˈkoj.ɾe]		
b.	(nu̲-wa)(ʧo̲ɾi)(-po̲no)=jo̲ɾe	1SG-buy-**REV.MOT**=FUT	‘I will go there to buy it’
	[nwaʧˈɾih.ˈnoj.ɾe]		
	(su̲-i)(ʧo̲-po)(no̲=jo)ɾe	3F-call-**REV.MOT**=FUT	‘she will go there to call him’
	[siʧˈpon.ˈjo.ɾe]		
c.	(nu̲-e)(ʧo̲hi)(-ko̲-nu)mo	1SG-speak-ACT-**SUBS.MOT**	‘I speak before I go’
	[neʧˈhik.ˈnu.mo]		
	(ti̲-ko-)(hu̲ma)-nu̲mo	3-VZ-illness-**SUBS.MOT**	‘he got sick before he left’
	[tkoh.ˈmam.mo]		
d.	(wi̲-ku)(ti̲-ko)(ko̲=jo)ɾe	1PL-look_like-**RECP**=FUT	‘we will look like each other’
	[wkut.kok.ˈjo.ɾe]		
	(wi̲-e)(nV̲ʧe)(ko̲-ʧo)(-ko̲ko)=jo̲ɾe	1PL-present-VZ-**RECP**=FUT	‘we will give each other presents’
	[wen.ʧˈek.ʧˈok.ˈkoj.re]		

This prosodic pattern, with a complex onset word-initially, a sequence of closed syllables, and one or two final open syllables, is also found in a rather small set of at least trisyllabic unpossessible nominal roots, as shown in (8). These roots do not occur with prefixes, so they do not participate in the type of alternation shown above.

(8) Iambic syncope in unprefixable tri- or quadri-syllabic nouns

(sV̲ma)tu	ˈsma.tu	‘spider sp.’
(hV̲no)ɾe	ˈhno.ɾe	‘toucan’
(kV̲ɾi)çV̲ɾe	ˈkɾiç.ɾe	‘peanut’
(kV̲ho)kV̲ɾe	ˈkhok.ɾe	‘river’
(pV̲ɾo)çi	ˈpro.çi	‘broom’
(siwi)wV̲ɾe	ˈswiw.ɾe	‘flute’
(V̲po)çV̲ʔe	ˈʔpoç.ʔe	‘ground’

This section describes the steps leading from the underlying representation to the surface form of the words presented above. The underlying form of words is posited as a sequence of CV syllables, of which only the initial syllable can be onsetless. It includes neither complex onsets nor complex rhymes. V in the

underlying form stands for the vowel to be syncopated, in absence of internal or historical evidence for its quality.[7] The surface form is derived through several steps: first, iambic parsing, which is the regular and most frequent metrical parse in Mojeño Trinitario (Section 3.1), then rhythmic syncope (3.2) and finally resyllabification (3.3). The different steps are illustrated with a pair of words that show an odd number (9a) and an even number (9b) of underlying syllables.

(9) a. /nu.-ta.nV.-ko.=wo.ɾe.=po/ [ntankowˈɾepo] 'I looked for it again'
1SG-look.for-ACT=again=PFV

b. /nu.-ta.nV.-ko.=wo.ɾe/ [ntanˈkowɾe] 'I look for it again'
1SG-look.for-ACT=again

3.1 Iambic parse

After word formation, the underlying representation is assigned a syllable structure with only open syllables. Iterative iambic footing starts from the left edge, and the final foot must not align with the right edge of the word.[8] As a result, the last syllable is left unfooted in words with an odd number of syllables, and the last two syllables are left unfooted in words with an even number of syllables. Primary stress falls on the rightmost foot, and rhythmic secondary stresses on other feet (more details on secondary stress in Section 3.3). This means primary stress is on the penultimate syllable of the underlying representation in words with an odd number of syllables, and on the antepenultimate syllable in words with an even number of syllables. This is schematized in (10) and (11).

(10) Metrical parse and stress placement in a word with an odd number of syllables

/nu-tanV-ko=woɾe=po/

nu	ta	nV	ko	wo	ɾe	po	*syllable assignment*
(.	x)	(.	x)	(.	x)	.	*metrical parse*
					x		*stress placement*

(11) Metrical parse and stress placement in a word with an even number of syllables

/nu-tanV-ko=woɾe/

nu	.ta	.nV	.ko	.wo	.ɾe	*syllable assignment*
(.	x)	(.	x)	.	.	*metrical parse*
			x			*stress placement*

Evidence for the iambic parse is found in both stress placement and rhythmic syncope (see Section 3.2). Its application from left-to-right is inferred from the facts that, in the words under study, stress always falls on an even-numbered syllable, and that adding prefixes to a root modifies its stress placement. Trochaic parsing from either the right or the left would not give the correct result. Evidence for the constraint banning the alignment of the last foot with the right edge of the word is found in words with an even number of

[7] The quality of the syncopatable vowels posited in the underlying form can sometimes be determined by combining information from two surface forms (depending on the number of syllables preceding it). For example, from *pokre* ~ *pkure*, the underlying form /pokure/ 'canoe' can be posited. This kind of evidence is easy to find for suffixes and clitics, nonexistent for word-initial prefixes and unprefixable roots, and is statistically rather rare in my corpus for most roots. When internal evidence is lacking, I rely on data from Old Mojeño (Marbán 1702) or the extinct dialect Loretano (Becerra Casanovas 1980). I am not using data from Ignaciano because in that dialect, the /a/ vs. /o/ distinction is neutralized to /a/.

[8] This can be analyzed in Optimality Theory as ranking a constraint prohibiting a final foot above alignment of a foot at the right edge (NONFINALFT >> EDGEMOST).

syllables: these words are stressed on the antepenultimate rather than on the final syllable, thus the last two syllables are analyzed as unfooted.

3.2 Syncope

On the basis of the iambic parse, syncope applies to all the syllables that are in weak prosodic positions, i.e. those in weak metrical positions within the foot (odd syllables) and the unfooted syllables (the last syllable or last two syllables), with the exception of the final one.[9] Vowels in strong metrical positions are never affected by rhythmic syncope.

Metrical parse and stress placement are schematized in (12) with a word with an odd number of syllables, and in (13) with a word with an even number of syllables. Examples (12) and (13) show the syncope of every odd vowel (those in metrically weak syllables and that of unfooted /wo/ in (13)), excluding the final one. As a result, a sequence of CVCV syllables can occur only at the right edge of words with an odd number of syllables, and comprises the penultimate stressed syllable and the final syllable.

(12) Syncope in a word with an odd number of syllables

/nu-tanV-ko=woɾe=po/

nu	ta	nV	ko	wo	ɾe	po	*syllable assignment*
(.	x)	(.	x)	(.	x)	.	*metrical parse*
					x		*stress placement*
n_	ta	n_	ko	w_	ɾe	po	*syncope*

(13) Syncope in a word with an even number of syllables

/nu-tanV-ko=woɾe/

nu	ta	nV	ko	wo	ɾe	*syllable assignment*
(.	x)	(.	x)	.	.	*metrical parse*
			x			*stress placement*
n_	ta	n_	ko	w_	ɾe	*syncope*

The data include several examples showing that when a word-initial vowel deletes, a glottal stop is inserted word-initially, as in (14). There is no glottal stop root-initially in the underlying form of *etsepi* 'thread', as can be observed when the root is prefixed, but it is present word-initially when the initial vowel /e/ syncopates. The glottal stop is part of the regular consonant inventory (Section 2.3), but is not considered phonemic before a pronounced initial vowel. Glottal insertion results in word-initial complex onsets constituted of a glottal stop followed by another consonant, thus forming minimal pairs like *ˈhiɾo* 'fish sp.' vs. *ˈʔhi.ɾo* 'man' where the glottal stop "replaces" a syncopated initial vowel unattested synchronically but postulated in the underlying form /V̲hiɾo/. Glottal insertion will be discussed again in Section 8.

(14) (e̲tse)pi ˈʔtse.pi 'thread'
(nu̲-e)(ts̲epi)-ɾa netsˈpi.ɾa 1SG-thread-POSD 'my thread'

There are three types of evidence that syncopating vowels are present in the underlying representation. First, the quality of the syncopated vowels is not predictable: any vowel can be dropped (see Section 5). Second, surface V/Ø alternations show that syncopating vowels are present when they are in strong metrical positions, as was shown in (6) and (7). Third, some phonological alternations can only be explained with an underlying vowel being present in the phonological environment. In (15), the /k/ of the suffix *-ko* is realized /s/ on the surface. Sibilantization of /k/ always occurs before an /i/, but there is no /i/ following /s/

[9] Again in OT, the preservation of the final vowel would be due to an ANCHOR constraint which requires the final segment in the input to correspond to the final segment in the output.

in the surface form of (15).[10] Sibilantization has been triggered by an underlying vowel /i/ that has been subsequently syncopated.

(15) (pi-ni)-ko-iʔo ˈpnis.ʔo 2SG-eat-ACT-APPL 'you eat with it'

3.3 Resyllabification

Once vowels not associated with strong metrical positions have been deleted, a new process of syllabification applies from left to right and follows a principle by which codas are preferred over complex onsets, as exemplified in (16a).[11] Resyllabification creates complex onset word-initially only, by relinking the stranded consonant to the following syllable as in (16b) The analysis of the word-internal stranded consonant as a coda of the preceding syllable, as in (16a), rather as an element of a complex onset is congruent with the fact that if this consonant happens to delete, as in (16c), it triggers compensatory lengthening of the preceding vowel (this process will be described in Section 6.4). Resyllabification does not affect stress placement. The stress pattern that was initially computed on the input before rhythmic syncope is maintained on the same syllables (the same vowels), even when the structure of the syllables they pertain to has been modified through resyllabification. Gordon and Rose (2019) offer a description of the acoustic correlates of primary stress, secondary stress and unstressed vowels.

(16) a. (kVho)kVɾe khok.ɾe 'river'
b. (kVɾi)no kɾi.no 'reed sp.'
c. (nu-ko)wo=po nkoː.po 1SG-bathe=PFV 'I bathed'

Resyllabification is schematized using a word with an odd number of syllables in (17) and a word with an even number of syllables in (18). In (17), the number of syllables is reduced from nine in the underlying representation to four in the surface form, and in (18) from eight to three. Note that all syllables are closed except the last two syllables in (17) and the last one in (18) which are open. The initial syllable has a complex onset.

(17) Resyllabification in a word with an odd number of syllables

/nu-tanV-ko=woɾe=po/

nu	ta	nV	ko	wo	ɾe	po	*syllable assignment*
(.	x)	(.	x)	(.	x)	.	*metrical parse*
					x		*stress placement*
n_	ta	n_	ko	w_	ɾe	po	*syncope*

[ˌntan.ˌkow.ˈɾe.po] *syllabification*

(18) Resyllabification in a word with an even number of syllables

/nu-tanV-ko=woɾe/

nu	ta	nV	ko	wo	ɾe	*syllable assignment*
(.	x)	(.	x)	.	.	*metrical parse*
			x			*stress placement*
n_	ta	n_	ko	w_	ɾe	*syncope*

[ˌntan.ˈkow. ɾe] *syllabification*

[10] The hiatus /o/ + /i/ has been resolved by deletion of /o/ before metrical parsing; see Section 6.1.

[11] My basis for identifying the syllable is the pause-insertion task. Speakers inserted breaks in their oral production of words when asked to either explicitly break the word in small chunks or just to repeat it slowly and distinctly.

In words with an even number of syllables, stress that is assigned to the antepenultimate syllable of the underlying form shows up on the penultimate syllable of the surface form, due to syncope in the penultimate syllable and resyllabification of the stranded consonants. In words with an odd number of syllables, stress stays on the penultimate, since this syllable and the following do not undergo syncope. This results in stress occurring regularly on the surface penultimate syllable of words with an iambic parse and regular syncope application, even though stress is not compiled from the right edge. An argument for not considering stress to apply post-lexically to the penultimate surface syllable is that when a syncopatable penultimate syllable is immune to syncope in words with an even number of syllables, stress remains on the antepenultimate syllable even on the surface, as shown in (19). Vowels that are immune to syncope are in bold in the underlying representation.

(19)	(ti-hu)n**o**po	ˈchu.no.po	3-run	‘(s)he/it runs’
	(ti-i)(hure)-r**e**-hi	tih.ˈɾe.ɾe.hi	3-be.hot-RED-CLF	‘it's very hot’

Evidence for the rhythmic secondary stresses falling on non-final feet is also found in words with underapplication of syncope in the non-final feet, such as (20). In words where syncope applies as expected, a consequence of syncope is that all heavy syllables (CVC or CV:) [12] are stressed, because they result from the reduction of a whole foot, as in
(21). Another consequence is that stress clashes are common in the surface forms. The secondary stress pattern is a strong argument for the preservation of foot boundaries.

(20)	(t**a**.po).(n**o**.ˈho).ko.po	ta.ˌpo.no.ˈhok.po	‘it chased him/her/it’
	(n**a**.ko).(p**a**.ja).(k**a**.ˈɾi).pu.ka	na.ˌko.pa.ˌja.ka.ˈɾip.ka	‘they would reach it’
(21)	(ti-tu)(mama)-ko	ˌttum.ˈma.ko	‘it is cold’
	(su-i)(ʧo-po)(no=jo)ɾe	ˌsiʧ.ˌpon.ˈjo.ɾe	‘she will go there to call him’
	(ʔeʧo)(hiri)(ɾiˈko)wo	ˌʔʧoh.ˌɾiː.ˈko.wo	‘story’

The fact that resyllabification relinks stranded consonants as codas of the preceding syllable word-internally goes against the Maximum Onset Principle (Kahn 1976). This principle states that intervocalic consonants are maximally assigned to the onsets of syllables, provided that the resulting onset is phonotactically allowed. Mojeño Trinitario data show that complex onsets are dispreferred word-internally, even if they are phonotactically allowed in word-initial onsets (see Goodman 1992 for a similar pattern). For instance, /kr/ is assigned to two different syllables word-internally in (16a), even though it is a perfectly valid complex onset word-initially in (16b). Relinking the stranded consonant with the preceding syllable ensures a heavy syllable and preserves the foot boundaries.

Additionally, Mojeño Trinitario complex onsets add one more challenge to sonority principles (Ball & Müller 2016). They are typologically surprising, as they do not follow the Sonority Principle, or Syllable Contact law: “A syllable contact A$B is the more preferred, the greater the sonority of the offset A and the less the sonority of the onset B” (Davis 1998). Instead, consonants with any mode of articulation can be combined in a sequence in Mojeño Trinitario,[13] except those that are tap-initial and sequences of two affricates (Section 6.4 describes the repair strategies).[14] Counterexamples to the Syllable Contact Law are given in (22).

(22)	*fricative-stop*	[çpamo]	‘handle’
	nasal-stop	[mpokɾe]	‘my canoe’
	glide-stop	[jkuçi]	‘tree’

[12] Deletion of /ɾ/ and compensatory lengthening are explained in Section 6.4.

[13] There is some variation in the realization of the complex onsets: the initial consonant of the onset can sometimes be phonetically syllabic (especially for nasals and fricatives), or vocalized (for glides), or completely overlap with the following consonant.

[14] Taps are not found word-initially in simple onsets either.

nasal-affricate	[ntsukɾupa]	'my cane'
glide-nasal	[jmomohi]	'marsh'
glide-tap	[wɾaju]	'hen'

3.4 Summary

To summarize, the common features of the output of syncope on iambic words are: a reduced number of syllables, a word-initial complex onset, a sequence of closed syllables (except the (one or two) final ones), and penultimate stress on the surface. This pattern applies equally to any kind of root (bisyllabic or trisyllabic, nominal or verbal) with prefixes (and optionally suffixes/clitics), and to some prefixless nominal roots that are minimally trisyllabic.

4 Minor pattern of stress and syncope

There are some Mojeño Trinitario words that cannot be accounted for by the iambic parse: their stress and syncope patterns are different. Most of these words are based on unprefixable bisyllabic roots, such as those presented in (23). They are non-possessible nouns and pronouns. Since they cannot take any prefix, they do not show alternation in which vowels syncopate: only the even vowels can syncopate, if they are not word-final.

(23) Trochaic syncope affecting words with unprefixable bisyllabic roots

(juku)	ˈju.ku		'fire'
(aʧu)	ˈa.ʧu		'hammock'
(eto)	ˈe.to	3NH	'it'
(etọ)(-ho=pụ)ka	et.ˈhop.ka	3NH-EXI=SPEC	'if there is'
(etọ)(-ho=ç̣e)ne	et.ˈhoç.ne	3NH-EXI=INTENS	'there really is'
(etọ)(-na=jọ)(re=pụ)ka	et.naj.ˈɾep.ka	one-CLF=FUT=SPEC	'it could be that it will be one'
(kuhụ)-pa	ˈkuh.pa	manioc-CLF	'manioc root'
(mopọ)-hi	ˈmop.hi	bee-CLF	'wax'
(pakụ)(-çiɾa)	pak.ˈçi.ɾa	dog-DIM	'small dog'

A few of the words showing this minor pattern are based on unprefixable trisyllabic roots, such as those in (24). Also, when the monosyllabic negative auxiliary *wo ~ wi* carries clitics, it shows the same pattern: *wi=pụka > ˈwip.ka*, *wi=po=ɾine > wip.ˈɾi.ne*.

(24) Trochaic syncope affecting words with unprefixable trisyllabic roots

(epV̱)ɾe	ˈep.ɾe		'creeper'
(hojV̱)no	ˈhojno		'tree.sp'
(womV̱)ʔi	ˈwomʔi		'pampa'
(kojụ)(re-çị)ɾa	koj.ˈɾeç.ɾa	bird-DIM	'small bird'
(metsụ)(si-çị)ɾa	met.ˈsiç.ɾa	pot-DIM	'small pot'
(popV)(ji-çị)ɾa	pop.ˈhiç. a	papaya-DIM	'small papaya'

4.1 Trochaic parse and syncope

I analyze these words as having a trochaic parse, as illustrated with two words showing an even (25) and an odd (26) number of underlying syllables. Syllable assignment to the underlying form applies as above, building open syllables. Trochees are built iteratively starting from the left edge. There is no constraint banning the alignment of the final foot with the right edge of the word, so that every syllable is parsed in

words with an even number of syllables, but the final syllable is left unfooted in words with an odd number of syllables.[15] Stress placement, syncope and resyllabification apply very similarly as on iambic words. Primary stress is assigned to the rightmost foot. The vowels that are in weak prosodic positions delete, except the final one that is always maintained, even if unfooted. Finally, stranded consonants are resyllabified as codas of the preceding syllable word-internally.

(25) Trochaic pattern in a word with an even number of syllables

/paku-çiɾa/ 'small dog'

pa	ku	çi	ɾa	*syllable assignment*
(x	.)	(x	.)	*metrical parse*
		x		*stress placement*
pa	k_	çi	ɾa	*syncope*
[pak.ˈçi.ɾa]				*syllabification*

(26) Trochaic pattern in a word with an odd number of syllables

/kojure-çiɾa/ 'small bird'

ko	ju	re	çi	ɾa	*syllable assignment*
(x	.)	(x	.)	.	*metrical parse*
		x			*stress placement*
ko	j_	re	ç_	ɾa	*syncope*
[koj.ˈreç.ɾa]					*syllabification*

Just as with iambic words, the number of syllables is reduced, and stress falls on the penultimate syllable of the surface form. All syllables are closed, except the final one or two syllables. The main difference in the resulting surface forms between words with a trochaic parse and those with an iambic parse is the absence of a word-initial complex onset.

The strong-weak pattern found on bare CVCV roots like *juku*, *atʃu* or *eto* could at first glance be analyzed as an iambic parse plus the constraint prohibiting a foot at the right edge: the iambic foot would then include the first syllable only, resulting in a degenerate foot. However, since when these roots are suffixed or cliticized, the strong-weak pattern continues iteratively over suffixes and clitics to the right of the root (as in *pakˈçiɾa*), the pattern is more coherently described as trochaic.

4.2 Distribution of the two metrical patterns

I posit two types of metrical parse in Mojeño Trinitario: a general iambic pattern, and a more restricted trochaic pattern. Out of a 1187 native roots (verbs and nouns only), a raw count gives 101 items with a trochaic parse, i.e. less than 8.5% of these lexical roots.[16] The very great majority of roots are associated

[15] A reviewer has suggested that, in order to limit positions for syncope to the weak positions of feet and not having to invoke a special status for the final syllable to explain the absence of syncope in final position, all syllables should be parsed, including the last two syllables of iambic words with an even number of syllables, and the last syllable of all words with an even number of syllables. A constraint should then be added to prohibit primary stress on final syllables. Therefore, the final vowel would not syncopate either because it is the head of a foot, or if it is not, because its deletion would result on stress on the final syllable. The analysis suggested gives the same result as ours in terms of syncope and placement of primary stress, but assumes a non-primary stress on the final vowel of some words, stress for which there is no acoustic evidence (Gordon & Rose 2019).

[16] Note that the total number of items in my lexicon may include some morphologically complex stems that have been omitted when classifying trochaic and iambic roots.

with an iambic parse: the 651 verb roots as well as most of the 839 nominal roots: 97 of the 186 bisyllabic nouns, 91 of the 102 trisyllabic and all larger nouns (but one) are iambic.

The distribution of the two metrical patterns is summarized in Table 1 with examples showing the rhythmic syncope pattern. The factors determining which type of metrical parse is used are: i) the number of syllables of the root, and ii) the prefixability of the root (and not just presence or absence of a prefix, because possessible nouns can have an iambic parse even when they are unpossessed, i.e. prefixless). Note that the prefixability of the root is partly dependent on part of speech because verbs always require a prefix.

Table 1. Distribution of the two metrical patterns

verbs (all prefixable)		**non-prefixable nouns**		
2-syllable iambic	*3-syllable iambic*	*3-syllable iambic*	*3-syllable trochaic*	*2-syllable trochaic*
(nV̲-ho)pu	(nV̲-ko)mV̲nu	(wV̲ɾa)ju	(kojV̲)ɾe	(paku)
ˈnho.pu	ˈnkom.nu	ˈwɾa.ju	ˈkoj.ɾe	ˈpa.ku
‘I am white’	‘I need’	‘chicken’	‘bird’	‘dog’
(nV̲-ho)pu̲-na	(nV̲-ko)(mV̲nu)=jo̲ɾe	(wV̲ɾa)(ju̲-çi)ɾa	(kojV̲)(ɾe-çi̲)ɾa	(paku̲)(-çiɾa)
ˈnhop.na	nkom.ˈnuj.ɾe	wɾaj.ˈçi.ɾa	koj. ˈɾeç.ɾa	pak.ˈçi.ɾa
‘I am a white person’	‘I will need’	‘chick’	‘small bird’	‘small dog’

prefixable nouns		
2-syllable iambic	*3-syllable iambic*	
(nV̲-hi)jo	(po̲ku)ɾe	(po̲ku)(ɾe̲-çi)ɾa
ˈnhi.jo	ˈpku.ɾe	pku:.ˈçi.ɾa
‘my body hair’	‘canoe’	‘small canoe’
(nV̲-hi)(jo̲-ma)ma	(nV̲-po)ku̲ɾe	(nV̲-po)(ku̲ɾe)-çi̲ɾa
nhij. ˈma.ma	ˈmpok.ɾe	mpok.ˈɾeç.ɾa
‘my beard’	‘my canoe’	‘my small canoe’

The trochaic pattern applies only to words based on non-prefixable roots, i.e. to some non-possessible nominal nouns.[17] Among the non-possessible nouns, the trochaic pattern applies to all the bisyllabic ones (23), and to a few lexically determined trisyllabic ones such as those given in (18), as well as *ˈçi:no* ‘herb sp.’, *ˈkojɾe* ‘bird’, *ˈjutʃmo* ‘wall’, *ˈsiçeru* ‘ovenbird’, *ˈukohi* ‘cloud’, *ˈwereçe* ‘hail’, and *ˈwajosi* ‘horsefly’. It must be noted that these few trochaic trisyllabic roots are likely to be diachronically made up of a bisyllabic root (not attested elsewhere) followed by a CV suffix, generally a classifier. For instance, *ˈjutʃmo* ‘wall’ contains the *-mo* classifier for flat and thin items, and *ˈwajosi* ‘horsefly’ contains the classifier *-si* for round things that normally applies to insects. Even if these morphemes have lexicalized into synchronically unsegmentable trisyllabic roots, they retain the trochaic pattern specific to bisyllabic roots. In contrast, some prefixable bisyllabic nominal roots are iambically parsed either when carrying a prefix or when carrying suffixes only (see the first two lines of (6)). In this case, it seems that the bisyllabic root with a suffix is parsed like a trisyllabic root. Other prefixable bisyllabic nominal roots are trochaically parsed in the same context, as shown in (27).[18]

[17] The trochaic pattern applies as well on some -VCV suffixes and on demonstratives used as predicates with the existential copula. A detailed examination of the interaction of morphology and stress in Mojeño Trinitario falls beyond the scope of this paper.

[18] The metrical inertness of cognate “alienalizing” suffixes is explicitly discussed in the analysis of Nanti stress by Crowhurst & Michael (2005: 49-50), but in Mojeño, this inertness is not systematic (see de Carvalho & Rose 2018 for a discussion of this issue in a diachronic perspective).

(27) nu-hosi ˈnho.si 1SG-hat ‘my hat’
hosi-ɾe ˈhos.ɾe hat-NPSD ‘hat’

As a consequence, knowing the morphological structure of a word does not always make the metrical parse predictable. Another example of this is the three numerals, that are (C)VCV roots and obligatorily take a classifier, usually the human classifier *-na* used as a default form. The numeral for ‘one’ is stressed on the first syllable *ˈetona*, while the other two numerals are stressed on the second syllable: *aˈpina* ‘two’ and *moˈpona* ‘three’. To conclude, stress is normally iambic in Mojeño Trinitario, but lexically determined as trochaic for some trisyllabic nominal roots and some bisyllabic nominal roots taking suffixes only.

5 The extent of syncope

This section briefly explains how syncope is on the one hand regular and predictable (in terms of the metrical parse) whatever the context of utterance, and phonetically categorical; and on the other hand undergoes underapplication.

5.1 Absence of variation in syncope

Syncope in Mojeño Trinitario is categorical: it is a regular and shared feature for all speakers, in all genres and all speaking rates. It shows negligible variation in its application to specific words.

5.2 Absence of gradience in syncope

Syncope in Mojeño Trinitario shows negligible variation in its phonetic realization. The vowel is completely deleted rather than just reduced:[19] there is phonetically no remnant of the deleted vowel, and no hint about its quality. Speakers never write or even mention the syncopated vowels. Borrowings also show categorical syncope: *ʧkote* ‘whip’, *ʧukrate* ‘chocolate’ (from Spanish *chicote* and *chocolate*).

5.3 Underapplication of syncope

If the position of the syncopatable vowels is largely predictable, some of the syncopatable vowels do not delete, in both iambic and trochaic words, as exemplified in (19), (20), and Table 2. Remember that boldface marks immunity to syncope in the underlying representation.

Syncope actually often underapplies. Only 384 out of 703 syncopatable vocalic positions observed in the lexicon syncopate.[20] This means that about 45% of the syncopatable vowels under study are preserved. Immunity to syncope is therefore not a marginal fact. Very briefly, immunity to syncope is observed in both roots and affixes, and both iambically and trochaically parsed words. For now, no clear pattern of underapplication has been uncovered. Phonological restrictions on syncope are cross-linguistically frequent (see, for example, Munshi & Crowhurst 2012 on Koshur). The brief description of morphophonology in Section 6 shows that it is not the case that syncope is blocked to avoid certain consonant clusters in Mojeño Trinitario. Another possible factor for immunity to syncope is vowel quality. This is precisely what drives cases of “differential syncope” (Gouskova 2003). As stated above, vowels with low sonority are a better target for syncope. In Mojeño Trinitario, all five vowels of the underlying inventory syncopate: /a, e, i, o, u/, but they do so in different proportions. Figure 1 is based on the examination of the behavior of 703 weak metrical positions within particular roots or bound morphemes (corpus detailed in note 20). It shows that /i/, /o/, and /u/ are much more prone to deletion that /a/ and /e/.

[19] A detailed phonetic transcription would show some transitional vocalic sounds between the two consonants of the complex onset word-initially.

[20] The specific weak positions targeted in the counts are: the vowel of monosyllabic suffixes and personal prefixes, both vowels of bisyllabic suffixes and clitics, the second vowel of unpossessible bisyllabic and trisyllabic trochaic noun roots, the initial vowel of unpossessible trisyllabic iambic noun roots, the second vowel of possessible disyllabic and trisyllabic iambic noun roots, and the second vowel of bisyllabic and trisyllabic iambic verb roots.

Table 2. Underapplication of syncope

iambic pattern			
(t**a**-no)si	taˈnosi	3NH-stay	‘it stays’
(t**i**-we)(n**o**po)=jo**ɾ**e	twe.no.ˈpoj.**ɾ**e	3-fall=FUT	‘(s)he/it will fall’
(m**i****ɾ**o)-**ɾ**e	mi.ˈ**ɾ**o.**ɾ**e	face-NPSD	‘face’
(m**a**-ʧ̲i)n**e**no	ma.ˈʧ̲i.ne.no	3M-daughter_in_law	‘his daughter-in-law’
(ʧ̲i̲ne**)**n**o**-ko	ˈʧ̲ne.no.ko	daughter_in_law-NPSD	‘daughter-in-law’
trochaic pattern			
(pet**i**)(-çira)	pe.ti.ˈçi.ra	house-DIM	‘small house’
(on**i**)(-çir**a**)(rine)	on.çi.ra.ˈri.ne	DEM-DIM=RESTR	‘just a little bit left’
(et**o**)(-na-ç̲e̲)ne	e.to.ˈnaç.ne	one-CLF-INTENS	‘the only one’
(un**e**)(-muʔi)	u.ne.ˈmu.ʔi	water-CLF	‘rain season’

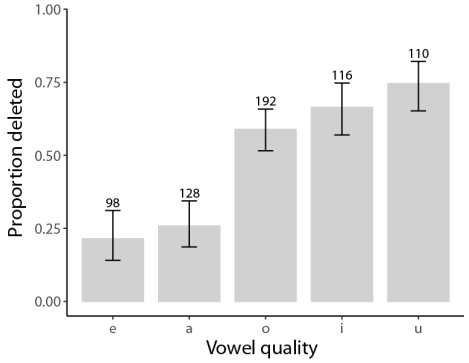

Figure 1. Syncope rate by vowel quality in Mojeño Trinitario. Error bars represent the confidence intervals. The numbers indicate the sample size for each vowel quality.

(28) shows the scale of proneness to deletion that is inferred for Mojeño Trinitario. As discussed in Section 2.1, universal tendencies drive the expectations that the more sonorous, the less prone to syncope. However, the scale of proneness to deletion given in (28) is not the perfect mirror image of the sonority scale presented in (3): ə < u, i < e, o < a. Most strikingly, not only vowel height but also vowel rounding/backness is positively correlated with proneness to syncopate. Note that underapplication of syncope supports the independence of vowel quality and footing: footing is always regular, whether syncopatable vowels syncopate or not. This also implies that underapplication of syncope cannot be accounted for by assuming a lexical stress on non-syncopated vowels.

(28) Scale of proneness to deletion in Mojeño Trinitario

a, e < o, i, u

Other constraints could have a statistical influence on (under)application of syncope, such as word length and position within the word. They will be evaluated in a separate paper investigating the under-appplication of syncope. However, one must note idiosyncratic cases. Three examples are given. First, in some examples like (29), the presence or absence of syncope cannot be accounted for by vowel quality, adjacent consonants, root length or type, grammatical function of morphemes, nor word length. (Under)application of syncope therefore seems to be a feature of the word, not of the specific morpheme concerned. Second, the weak vowel of the numeral *(et**o**)na* *ˈetona* ‘one’ is not normally syncopated. It has a rarer realization (*ˈetna*), perhaps explainable by the emergent grammaticalization of the numeral ‘one’ as

a non-specific article ‘an, some’. (Under)application of syncope is thus affected by historical processes like lexicalization and grammaticalization. Third is the verb root *anu* ‘to pass, cross’, that is generally followed by a classifier for the space to be crossed. Depending on the combination, the /u/ vowel of the root syncopates or not, and in one combination it is actually the vowel of the classifier that syncopates. There is no synchronic reason for this combination not to follow the expected metrical parse.

(29)	(ti-hu)(nopo)(=pori)po	thumpopˈripo	3-run=PROG.GRAD	‘He/she/it is running along.’
	(ti-hu)(n**o**po)(=pori)ʔi	thunopopˈriʔi	3-run=CONC.MOT	‘He was running along the way’.

(30)	(ñi-a)(n**u**-çe)-ʔo	ñanuˈçeʔo	3M-pass-CLF:cyl-ACT	‘He is crossing a log.’
	(ñi-a)(nu-ku)-ʔo	ñanˈkuʔo	3M-pass-CLF:path-ACT	‘He is crossing a path.’
?	(ñi-a)(nu-si)-ko	ñaˈnusko	3M-pass-CLF:sphere-ACT	‘He is passing a round object.’

6 Rhythmic syncope and morphophonology

The interaction of syncope with the rich and complex morphophonology of the Mojeño Trinitario word is interesting in several respects. First, vowel deletion occurs beside rhythmic syncope, to resolve hiatus.[21] Second, morphophonological rules, metrical parse and rhythmic syncope apply sequentially. Some phonological rules occur before the metrical parse, while others are best described as occurring before or after syncope. Third, the results of both syncope and phonological rules are additional phonological contrasts on the surface and enhancement of segmental opacity.

The ordering of these processes is summarized in Figure 2. In the following subsections, the morpho-phonological rules will be briefly described,[22] and arguments will be given for their order with respect to the metrical parse and syncope. A final subsection will present a few cases summarizing how the interaction of morphophonology and syncope results in heavy opacity.

Prosodic processes	**(Morpho)phonological processes**
Underlying form	
↓	← Hiatus resolution by deletion
Metrical parse	
↓	← Consonant change due to adjacent vowels & vowel harmony
	← Other hiatus resolution
Syncope & resyllabification	
↓	← Consonant sequence repairs
Surface form	

Figure 2. Ordering of processes

6.1 Hiatus resolution by deletion

Vowel hiatus is not found on the surface. However, in the underlying form of Mojeño words, affixation and cliticization create heteromorphemic hiatuses. Some of these hiatuses are resolved before the metrical parse applies, by deletion of one of the vowels. Example (31) shows a hiatus between the /o/ of the causative prefix *ko-* and the /u/ of the verbal root (hiatus is in capital letters).

(31)	wi-kO-Uʧu-ku-ʔo=joɾe	(wiku)(ʧuku)(ʔojo)ɾe	wkuʧˈkuʔˈjo.ɾe
		*(wi-kO)(-Uʧu)-(ku-ʔo)=joɾe	*wko.ʧuk.ˈʔoj.ɾe

‘We are going to take him out of it.’

[21] A process of apocope has also been observed in continuous rapid speech. It is beyond the scope of this paper.

[22] These processes will be presented with more details in a grammar in preparation. Most critical for this paper is 1) how these processes interact with metrical parse and syncope 2) the resulting greater opacity.

If the iambic metrical parse applied first, we would expect every odd vowel to be in a weak position (second line of the example). This would trigger the syncope of the first /u/ of *uʧu*, the vowel of classifier *-ku* ~ *-k* and the first vowel of the future clitic *=jore*. Instead, they are the three vowels that are actually maintained in the surface form (along with the final one), showing that they are in strong metrical positions. We must therefore hypothesize that the hiatus /o/+/u/ has been resolved by deletion of the /o/ before the metrical parse takes place.

6.2 Consonant change due to adjacent vowels and vowel harmony

Consonant change due to adjacent vowels and vowel harmony occurs in very restricted phonological and morphological environments respectively. Phonological processes affecting consonants due to adjacent vowels are limited to /k/ lenition: the velar stop is fricativized and palatalized as /ç/ between a front vowel and an /a/, and sibilantized as /s/ between a front vowel and an /i/. Vowel harmony most commonly involves an /a/ trigger and an /o/ target, and occurs in very restricted environments: in the verb root *jono* 'to go' and the associated motion clitic *=poriʔi* when adjacent to the irrealis *-a*, and in the copula *-ojo* after an /a/-final pronoun. Both /k/ lenition and vowel harmony are analyzed as occurring before syncope.

Example (32) illustrates both vowel harmony between the irrealis *-a* and the associated motion clitic *=poɾiˈi*, and /k/ lenition between /i/ and /a/ (this /a/ is the result of hiatus resolution of /o/+/a/ before the metrical parse, the process illustrated in Section 6.1). In this example, the /a/ of the irrealis suffix *-a* is crucial in triggering both /k/ lenition and vowel harmony. In fact, the corresponding realis form of *pniçˈpaːʔi* is *pnikˈpoːʔi* and shows neither /k/ deletion nor vowel harmony.[23] The first interesting fact to note is that the /a/ of the irrealis suffix does trigger /k/ lenition and vowel harmony even though it syncopates and consequently does not appear in the realization of the word. It is therefore clear that /k/ lenition and vowel harmony apply before syncope (their ordering with respect to metrical parse cannot be determined as it has no consequence). If syncope applied first, the /a/ in the third syllable would delete and therefore not be present as part of the environment triggering palatalization of /k/ and vowel harmony.

(32) /k/ lenition and vowel harmony before syncope

/pi-ni-ko-a=poɾiʔi/ 'eat while you go'

pinikapoɾiʔi						*hiatus resolution*
piniçapaɾiʔi						*palatalization and vowel harmony*
pi	ni	ça	pa	ɾi	ʔi	*syllabification*
(.	x)	(.	x)	.	.	*metrical parse*
			x			*stress placement*
p_	ni	ç_	pa	ɾ_	ʔi	*syncope*
[pniç.ˈpar.ʔi]						*resyllabification*
[pniç.ˈpaː.ʔi]						*compensatory lengthening*

6.3 Other hiatus resolution

Some hiatuses are resolved at a later stage than the processes described in Section 6.1, between metrical parse and syncope. Five different processes of hiatus resolution are observed in Mojeño Trinitario and listed in (33). Please note that "deletion" here is used for a hiatus resolution process that is distinct from syncope. Some examples of deletion and palatalization are given further below.

(33) Hiatus resolution processes

a. coalescence a + u → o

[23] It shows the form *=poːʔi* of the clitic *=poriʔi* due to syncope of its second vowel.

b. monophthongization {low central V}{frontV} → ə͡e
c. labialization {Labial C}{non-front V}{front V} → {Labial C}w{a͡e,i}
d. palatalization {$C_{-palatal}$}{front V}{non-front V} → {Cj, $C_{+palatal}$}{non-front V}
e. deletion deletion of one of the two vowels

At this stage, the resolution of each hiatus type is systematically the same, whichever of the two vowels is in a weak (syncopatable) position. First, the single vowel resulting from the resolution of a hiatus of vowels of two particular qualities is always consistent. For example, a hiatus /a/+/o/ will always be resolved by deleting /o/ and retaining /a/. Second, the vowel resulting from hiatus resolution is immune to syncope.[24] Keeping the same example of an /a/+/o/ hiatus, /a/ will always surface, even when it is in a weak position. Third, the metrical parse (and the resulting syncope that may result further to the right) is not modified in the process, even though the single vowel that surfaces may be of the same quality as the weak vowel of the hiatus (so in the case of an /a/+/o/ hiatus, the vowel of the syllable following the hiatus syncopates if /a/ is in a weak position underlyingly, even though it is immune to syncope). Fourth, the root node of the deleted vowel may re-associate with the preceding consonant in some of the hiatus resolution processes only, i.e., labialization (33c) and palatalization (33d).

The interaction of hiatus resolution processes and rhythmic syncope explains these facts. Because each vowel is the core of a separate syllable, every hiatus involves a weak and a strong vowel. If syncope occurred first, there would be no hiatus to resolve (one of the two vowels would necessarily have syncopated). Instead, since hiatus resolution occurs first, the remaining vowel is not eligible for syncope. As the single vowel in the foot, it automatically assumes the status of head of the foot and is therefore immune from syncope, which targets weak vowels only. The effect of syncope is not visible because the vowel that deletes is selected by the hiatus resolution process rather by metrical position. Even if the effect of syncope is not visible in the hiatus, there is no reason to think that rhythmic syncope is inactive, since the metrical parse is unchanged, as attested by syncope further to the right within such words.

Deletion occurs in case of hiatus between, among others, an /e/ and an /i/ (in capital letters in the examples). In this specific case, the result of hiatus resolution is always /e/, with /i/ being deleted. Importantly, the result is the same, whether the /e/ or the /i/ is in a position to syncopate as in (34a) and (34b), respectively. Thus, the deletion of the /i/ cannot be accounted for by syncope. If syncope occurred first, it would target /e/ in (34a), and the result would be **ʔʧanini*.

(34) a. (ʔV̲ʧa)(nE̲-I)ni ʔʧaˈneni ‘late people’
b. (wi̲-i)(mo̲-ʔo)(-ç̲enE)-I̲na wimʔoçˈnena ‘what we could see’

Palatalization as a process for hiatus resolution differs from /k/ lenition described in Section 6.2: it targets all non-palatal consonants (but is optional with the glottal stop) and occurs only before a hiatus involving first a front vowel and then a non-front vowel. When a front vowel is followed by a non-front vowel, the front vowel systematically deletes, no matter the metrical position it is associated with. This deletion therefore participates in the hiatus resolution process, but is not the expected application of rhythmic syncope: in the end, one of the two metrical positions is not realized, but not necessarily the one that rhythmic syncope would have targeted. The front vowel deletion triggers palatalization of the preceding consonant (if not already palatal). I hypothesize that the root node of the front vowel re-associates with the preceding consonant as part of a palatal stability phenomenon. If syncope applied first, there would be no need for hiatus resolution (since one of the two vowels would necessarily be deleted as in the wrong outputs noted with *). The front vowel in this environment should delete only if associated with a weak prosodic position (otherwise the non-front vowel should delete), and there would consequently be no trigger for consonant change. Palatalization is illustrated in (35a) with the front vowel in a weak prosodic position and

[24] One exception is the deletable vowel /i/ resulting from hiatus resolution between the /o/ of an active suffix and the /i/ of the applicative suffix *-iʔo*, as in example (15). Hockett (1939; 1948) had also noticed that the interaction of morphophonological processes and rhythmic syncope resulted in “protected vowels” in Potawatomi.

in (35b) with the front vowel in a strong prosodic position (incidentally, the word is trochaic). If no hiatus resolution process was active, then the /o/ would syncopate in (35b), but it is maintained, and instead the /i/ deletes. The fact that the /i/ does not surface is not due to syncope but to hiatus resolution.

(35)	a.	(tI-A)(nu-ku)-ʔo	can.ˈku.ʔo	*tankuʔo	‘He/she/it crossing the path.’
	b.	(ma-kV)(nI-O)(ho-ri)ʔi	mak.ɲo.ˈho:.ʔi	*makniho:ʔi	‘Here he is’

An interesting aspect of palatalization is that it can be realized either through a secondary articulation (as p^j or w^j) or through a more robust change (/t/ → [c], /n/ → [ɲ]). When the palatalized consonant is a /t/, the result is [c] rather than [t^j], as in example (35a). Given that the vowel triggering the palatalization is deleted, this results in a situation where /c/ and /t/ contrast on the surface as in (36a). Similarly, diphthongization of /a/ and a following front vowel leads to the creation of a monophthong [ə͡e] in the surface inventory, which contrasts with /e/, as in the pair (36b-c).

(36)	a.	(ti-a)mo	camo	‘it is swollen’
		tamo		‘loose thread’ (Ibáñez Noza et al. 2009: 42)
	b.	(nA-E)tʃV-ko	n**ə͡e**tʃ.ko	‘they cut'
	c.	(nU-E)tʃVko	n**e**tʃ.ko	‘I cut'

6.4 Consonant sequence repairs

A direct consequence of syncope is the creation of consonant sequences, at morpheme boundaries or within morphemes themselves. Consonant sequence repairs thus obviously occur after rhythmic syncope. Three types of processes affect consonant sequences in Mojeño Trinitario: assimilation, dissimilation, and deletion, which triggers compensatory lengthening of the preceding vowel. The specific processes are listed in (37). All but nasalization of approximants affect the first consonant of the sequence, i.e. the one that was left stranded by vowel deletion and was resyllabified as the coda of the preceding syllable. There is no interaction such as feeding, bleeding or counterfeeding order between these rules.

(37) Consonant sequence repairs

a. *assimilation of place in nasals*	n → m / __{p, m} n → ɲ /__ç
b. *nasalization of approximants*	y → ñ / {n, m}__ w → m / m__
c. *dissimilation of place in* /p/	p → j / __ {p, m, w}
d. *defricativization*	ʧ → t / __ {ʧ, s, ts, ç} ts → t / __ ts
e. *deletion and compensatory lengthening*	ɾ → :Ø / __C w → :Ø / __{labial C} j → :Ø / __j *or* i__C

Example (38a) illustrates defricativization, and example (38b) deletion with compensatory lengthening. The process of compensatory lengthening occurs after resyllabification, and is triggered by the fact that consonants like /ɾ/ are not allowed as codas. It creates long vowels on the surface, which show meaningful distinction with short vowels, as illustrated in (4). This adds length as a contrastive feature of the surface vocalic inventory.

(38)	a.	(nu-e)-(ʔo-wi)-(jo-ɾe)-ʧiʧa	neʔ.wij.ˈɾe**t**.ʧa	‘I am going to hit you poor thing’
	b.	(nu-wo)ɾo-ʔo	ˈnw**o**:ʔo	‘I want’

6.5 Resulting opacity

As a result of rhythmic syncope, each root and bound morpheme is liable to have two allomorphs with different vowels being deleted, as in (39). And if phonotactics additionally comes into play, the relationship between the two allomorphs is in many cases easier to guess from the identity of meaning or function rather than from a similarity in form. The most outstanding example is that of the imperfective clitic *=ɾiʔi*, which is realized as *=ːʔi* with lengthening of the preceding vowel, whatever vowel it is, when its first syllable is in a weak prosodic position (40). Opacity is consequently pervasive in Mojeño Trinitario. The rest of this subsection offers several striking illustrations of the opacity of surface forms, as a result of both syncope and morphophonology.

(39) pkuɾe ~ pokɾe ‘canoe’
pitrihi ~ ptuːhi ‘to be coward’
anu ~ am ‘to cross’
ésane ~ san ‘field’

(40) teʃhikon**ɾiʔi** ‘they were speaking’
teʃhiknuː**ʔi** ‘(s)he was speaking to me’
teʃhikwiː**ʔi** ‘(s)he was speaking to you’

Reduplication is a process by which a prosodic domain of a root is copied and some regular meaning associates with this process. In Mojeño Trinitario, reduplication copies once or twice the final syllable of the (underlying) root, and expresses attenuation and/or repetition (see Rose 2014 for more details). The copy follows the base, and is often associated with the classifier *-hi* for ‘bulky shapeless entities’. Examples are given in (41). One can notice that the vowel of the copy is never deleted, even when in a weak prosodic position, as exemplified in (41c-e). Nevertheless, the vowel of the base can be deleted in the relevant environment as in (41a-b). In these cases, the reduplicated word does not show the vowel of the base that is repeated in the copy. Moreover, the stranded consonant can also be deleted and trigger compensatory lengthening, as in (41b) (see Section 6.4). In that case, neither the consonant nor the vowel of the copy is to be found in the surface form of the root. There is then no formal similarity between the copy and the base on the surface.

(41) Reduplication, underapplication of syncope, opacity

a. (pi-so)(po-po)(-hi-ko)-nu	psoppohˈkonu	2SG-believe-RED-CLF-ACT-1SG	‘You half-believe me.’
b. (ti-çi)(wo-wo)-hi	tçiːˈwohi	3-rain-RED-CLF	‘It’s raining a lot.’
c. (nu-ju)(se-ti)(-**t**i-hi)-ko	njustitiˈhiko	1SG-cut-RED-CLF-ACT	‘I chopped it.’
d. (ti-i)(hVɾe)-ɾ**e**-hi	tihˈɾeɾehi	3-be.hot-RED-CLF	‘It is warm.’
e. (ti-ko)(-huma)-m**a**-hi	tkohˈmamahi	3-VZ-sickness-REF-CLF	‘She is sickly.’

Another aspect of the morphology that seems very unnatural at first glance is the distribution of the allomorphs of the third person unspecified subject prefix. This prefix is realized as /t/ before consonants and front vowels and as /c/ before non-front vowels, i.e. it is palatalized before non-palatal vowels (42). The distribution makes sense when one takes into account the fact that the underlying form of the prefix is *ti-* and that palatalization is triggered by the process of hiatus resolution involving a front vowel followed by a non-front vowel (see Section 6.3).

(42) a. (tI-I)niko ˈtinko ‘it’s full’
b. (tI-A)mo ˈcamo ‘it is swollen’

Another unexpected fact is that morpheme addition may show up as phonological subtraction. The word in (43b) has one vowel less than the one in (43a) on the surface, and this actually shows that it has one more morpheme, the irrealis prefix *a-* whose presence is not obvious on the surface because of hiatus

resolution, but which triggers syncope in the root further to the right, by adding one more syllable to the metrical parse.

(43) a. (t**a**-no)si/ ta.ˈno.si 3NH-stay ‘It stayed.’
b. (tA-A)-nosi/ ˈtan.si 3NH-IRR-stay ‘Let it stay!’

The opacity resulting from syncope and the rich morphophonology of Mojeño Trinitario makes the segmentation of the words into morphemes and the identification of the morphemes and their allomorphs a challenge for a descriptivist linguist. In contrast, nothing indicates that Mojeño Trinitario speakers are aware of syncope either as a synchronic or diachronic process: the pervasive allomorphy of roots and affixes, the quality of syncopated vowels, and syncope in general are not an issue they ever discuss. The literature addressing this question in general proposes that speakers very likely memorize word forms rather than compute them from an abstract underlying form. According to Bybee (2001), words are listed in their phonetic forms in the mental lexicon. There is no experiment on morphophonological processing in Mojeño Trinitario.

7 Discussion

In this section, I will start by briefly summarizing the findings on the prosody of Mojeño Trinitario words (7.1) before considering Mojeño Trinitario syncope from a diachronic perspective (7.2). I will then discuss the Mojeño Trinitario syncope pattern from a typological perspective, both regarding its interaction with stress (8) and its hybrid status as rhythmic and differential at the same time (8.1).

7.1 Summary

This paper has described the basic prosodic properties of Mojeño Trinitario words. This language variety is remarkable in that in all words and throughout each word, the vowels that are in weak prosodic positions (in the weak branch of a foot, or unparsed) are subject to syncope (Section 3). This categorical and pervasive syncope process leads to resyllabification of stranded consonants as codas word-internally, or as a part of complex onsets word-initially. The second remarkable prosodic property of Mojeño Trinitario is that it has two types of metrical parse, both of which are iterative and apply from left to right. The iambic pattern is more frequent, while the trochaic pattern is restricted to some bisyllabic and trisyllabic nouns when they are prefixless (Section 4). With both metrical parses, stress always falls on the rightmost foot. The third remarkable prosodic property of Mojeño Trinitario is that all the vowels that are in weak prosodic positions do not actually syncopate (Section 5): some are lexically immune to syncope, and this immunity is more likely if the vowel is less sonorous. The final remarkable prosodic property of Mojeño Trinitario is the sometimes extreme opacity generated by the syncope process and enhanced by a high degree of morphological complexity and rich morphophonology, for which a sequential description is necessary (Section 6).

7.2 Synchrony and diachrony

This paper has presented Mojeño Trinitario rhythmic syncope from a synchronic perspective. If synchronically the surface forms can be accounted for as deriving from abstract underlying forms, the underlying forms are not likely to be represented in the speakers’ minds, but are rather close to a diachronic reconstruction. For example, to account for basic words like *khowo* ‘deer’ and *ʔseno* ‘woman’, we have postulated an underlying vowel after the initial consonant, but this vowel likely has no reality for the speakers, because no alternation in the present state of the language provides evidence for its quality (nor even its presence). And indeed, the underlying forms that we postulate are by and large equivalent to the forms postulated for Proto-Mojeño (de Carvalho & Rose 2018), and very similar to those of Old Mojeño (Marbán 1702): they assume the synchronic presence of vowels that were present diachronically, as in the case of *hohowo* ‘deer’ and *eseno* ‘woman’ attested in Old Mojeño (Marbán 1702). In a diachronic approach,

the forms with all the vowels and the forms showing fewer vowels are not two different constructs of the same entity, but two different entities at different times in the history of the language.

The question can be raised whether rhythmic syncope is still productive, or whether we presently observe the frozen form of a once active process. Many loanwords have undergone syncope (as mentionned in Section 5.2) but the history of borrowings is not known enough to correlate syncope in loanwords with historical stages of the language. Other data may suggest that syncope is not productive any more, unless they result from a different synchronic process that is not yet uncovered. In this paper, verbalization in *ko-* has provided examples of alternative realizations of nouns, as in *n-huma* 'my illness' and *t-ko-hma* 'he is sick' (6). However, in other *ko*-derived stems, the noun maintains the syllabic structure it shows in its most basic form (the possessed form for obligatorily possessed nouns). This is the case in *n-ko-ˈmetsi* 'I cook' derived from the trochaic noun *ˈmetsi* and *n-ko-hiːˈsumu* 'I have a moustache' from the iambic noun *n-hiːˈsumu* 'my moustache'. It seems that some roots have a frozen syllabic structure that is not overruled by rhythmic syncope when verbalized. Rhythmic syncope is therefore not fully productive nowadays. More work is needed to tell it with certainty.

A diachronic approach to syncope (like that taken in de Carvalho & Rose 2018) makes it possible to link syncope to many subsequent changes in the phonology of Mojeño. Rhythmic syncope led to a drastic change in syllable structure. While Proto-Mojeño is hypothesized to have only (C)V syllables,[25] Mojeño Trinitario shows both codas and complex onsets. Syncope also led to many changes in the segment inventory through phonologization of a series of long vowels, an additional vowel, and an additional consonant (see Section 6 and de Carvalho & Rose 2018). These, in their turn, make the discrepancy between the historical forms and the actual forms even greater, adding more abstractness to the underlying forms.

8 Interaction of stress and syncope in Mojeño Trinitario

Syncope is often considered as a strategy for metrical enhancement. In the case of Mojeño Trinitario, syncope creates heavy syllables (CVː or CVC),[26] which are always stressed. It thus enhances the metrical pattern in that heavy syllables are better stressed syllables. It also creates words with essentially only strong metrical positions, allowing stress clashes between primary and secondary stress (see Section 3.3). The Iambic/Trochaic Law initially predicted lengthening of stressed syllables and shortening of unstressed syllables to take place in iambic feet only (Hayes 1995). Data from Mojeño Trinitario contradict this prediction; in fact, they indicate that syncope works in a comparable fashion in iambic and trochaic words.

Kager (1997) demonstrated that syncope can result in metrical opacity. However, in the case of Mojeño Trinitario, it is hypothesized here that moraic stability conserves the initial moraic pattern through syncope. As argued in Section 3.3, the stranded consonant was analyzed as a coda of the preceding syllable rather than as an element of a following complex onset. Footing is thus preserved by this resyllabification. This analysis was based on both acoustic impressions by the speakers and the author and the fact that if the stranded consonant happens to delete, it triggers compensatory lengthening of the preceding vowel (see also Section 6.4). This analysis posits that syncope delinks the vowel from its mora, and that the mora is maintained and re-associated with another element. This moraic stability would hold in three cases. First, when a vowel of a word-internal mora deletes, the mora re-associates with the preceding consonant as in (16a) and this mora is taken over by the lengthened preceding vowel in case of deletion of the consonant as in (16c). Second, when a vowel of a word-initial mora deletes, the mora re-associates with the preceding consonant if there is one, as in (16b).[27] Third, if there is no preceding consonant in the underlying form, as

[25] Or mainly (C)V syllables, since a few diphthongs are attested in Old Mojeño, and there has been no effort yet in reconstructing these.

[26] As an answer to a reviewer, the only phonological process targeting specifically heavy syllables is compensatory lengthening, leading from CVC to CVː syllables (see Section 6.4).

[27] No phonological process in the language can be used as a test for this moraicity. But onset moraicity has been argued for elsewhere (Gordon 2005; Topintzi 2010).

in (14), then the mora is spelled-out by default as a word-initial glottal stop. (In this last case, there is no phonological process proving that the inserted glottal stop carries the mora of the syncopated vowel.) In these three cases, the mora of the syncopated vowel is re-associated either with the preceding consonant, or with an epenthetic glottal stop. Additionally, when a hiatus is resolved after the metrical parse, there is evidence from syncope that the metrical parse is maintained even when a vowel is deleted (35a). The number of syllables is reduced between the underlying representation and the surface form, but the number of moras is not. If rhythmic syncope fully applies, the number of surface syllables equals that of strong metrical positions plus the final syllable, and all the syllables preceding the non-primary stresses are heavy and carry some secondary stress, preserving the stress pattern linked to the metrical parse.

Finally, as mentioned in the introduction, Kager (1997) distinguishes gradient syncope and categorical syncope.

> *Gradient* rhythmic vowel deletion is phonologically incomplete, occurring in free variation with vowel reduction. It preserves the syllabicity of the 'deleted' vowel, which may be signaled by phonetic cues (open transitions at the deletion site etc.). It preserves the foot-based context in the output, in the form of secondary stresses. Since its context is fully recoverable from the output, gradient reduction/deletion involves no opacity. *Categorial* rhythmic vowel deletion is phonologically complete, and has no vowel reduction counterpart. It destroys the syllabicity of the deleted vowel, which is clear from the fact that syllable-governed phonology refers exclusively to the output syllabification. Moreover there is no secondary stress pattern that coincides with the alternating deletion pattern. (Kager 1997: 2)

Syncope in Mojeño Trinitario is much closer to the description of categorical rhythmic vowel deletion in that the deletion is phonologically complete. However, secondary stress is conserved in the output. Also, the foot-based context is generally recoverable from the output, and I argue that this is the case because of moraic stability: complex onsets, codas and long vowels are indicative of a mora that is not associated with a simple vowel, thus indicating a weak mora position within a foot. Just as McCarthy (2008: 512) did for Aguaruna, "one could argue that syncope is the realization of [Mojeño Trinitario]'s stress system." Therefore, moraic stability in Mojeño Trinitario undermines the exclusive relationship between the phonological completeness of the deletion and the metrical opacity that is at the heart of the dichotomous typology suggested by Kager.

8.1 Mojeño Trinitario as a hybrid type of syncope

This section aims to situate the syncope pattern of Mojeño Trinitario within the cross-linguistic patterns of syncope. It fits within Gouskova's (2003: 90-91) four-way typology of metrically-conditioned syncope based on two markedness constraints:[28] 1) no syncope/non-metrical pattern, 2) deletion of unfootable vowels, 3) deletion in LL sequences, and 4) deletion in LL sequences and of unfootable vowels. Mojeño Trinitario illustrates the fourth type, since both the vowels of weak metrical positions and unfootable vowels are deleted.

However, the syncope pattern of Mojeño Trinitario is cross-linguistically unique in several ways: 1) it is both a rhythmic and a differential syncope process (more details below); 2) it has a scale for proneness to deletion /i,o,u/ > /a,e/; 3) it is based on two different metrical parses, iambic and trochaic; 4) it allows the initial vowel of a word to syncopate, which is typologically unusual (more details below), and 5) it shows moraic stability.

The vowel of the first syllable of the Mojeño Trinitario words often syncopates. This result is typologically interesting, because this vowel is systematically immune to syncope in languages with comparable rhythmic syncope based on iambs (cf. initial immunity in McCarthy 2008; Peña 2015). McCarthy (2008:

[28] The constraints are SWP (stress to weight principle, that stressed syllables are heavy) and PARSE-σ (foot parsing is exhaustive), along with the faithfulness constraint MAXV (maximize all input vowels in the output).

518) notes that "Beckman (1997, 1998) and Casali (1996, 1997) have argued that word-, root-, or morpheme-initial position is a locus of special faithfulness." This is clearly not the case in Mojeño Trinitario.

The syncope pattern of Mojeño Trinitario also sheds a new light on differential syncope. Gouskova (2003: 183) discusses the different constraints that can be at work in differential syncope: 1) a requirement for the nuclei to be as sonorous as possible (*NUC/x), 2) a requirement for weak foot branches to be as low in sonority as possible (*MAR_{FT}/x), and 3) a requirement for strong foot branches to be as sonorous as possible (*PK_{FT}/x). At first glance, it seems that Mojeño obeys a constraint that is in fact the opposite of *MAR_{FT}/x, in that weak foot branches are preferably highly sonorous. But Mojeño syncope is not a simple case of differential syncope; it is a case of hybrid syncope, where both metrical positions and vowel quality play a role. Gouskova (2003) provides a first look into the interaction of metrically conditioned and differential syncope and describes one case of hybrid syncope, that of Lebanese Arabic. In Lebanese Arabic (Gouskova 2003: 218-45), high vowel syllable nuclei delete, depending on metrical factors. This is a case of differential syncope constrained by metrical structure. I argue here that Mojeño Trinitario exemplifies a different type of hybrid syncope, that of a metrically conditioned syncope constrained by vowel sonority. Vowel quality comes into play only in certain metrical positions, such that Mojeño Trinitario in fact follows the first constraint for differential syncope, *NUC/x, which states that the nuclei should be as sonorous as possible. However, this constraint applies only in weak prosodic positions.

Finally, the hybrid status of syncope in Mojeño Trinitario reveals that differential syncope is an intermediary stage towards a regular syncope process equally affecting the vowels of different qualities.

Abbreviations

Here is the list of the abbreviations that are not found in the Leipzig Glossing Rules: ACT active; CONC.MOT concomitant motion; DIM diminutive; EXI existential; INTENS intensive; NH non-human; NPSD non-possessed; PL.O plural of the object; POSD possessed; PROG.GRAD progressive gradual; RED reduplication; RESTR restrictive; REV.MOT reverse motion; SPEC speculative; SUBS.MOT subsequent motion; VZ verbalizer.

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