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Nominal and Verbal Extrametricality in Misantla Totonac

1. Introduction

Misantla Totonac is one of the four major varieties of the Totonac language found along the Gulf Coast of Mexico (MacKay 1999) [1]. Totonac speakers number fewer than 200,000, while Misantla Totonac speakers number only around 400. The language is said to have free syntactic order with considerably heavy verbal morphology. There are 12 vowel phonemes—3 basic vowel qualities (/i, a, u/), each of which can be plain, laryngealized (i.e., creaky voiced), plain long, or laryngealized long—and 16 consonant phonemes:

1. Vowel Phonemes

Quality Type	Plain	Laryngealized	Plain Long	Laryngealized Long
i	/i/	/ḭ/	/ii/	/ḭḭ/
a	/a/	/a̰/	/aa/	/a̰a̰/
u	/u/	/ṵ/	/uu/	/ṵṵ/

2. Consonant Phonemes

	Labial	Alveolar	Alveo-palatal	Palatal	Velar	Uvular	Glottal
Stop	p	t			k	q	
Affricate		ʦ	ʧ				
Fricative		s ɬ	ʃ				
Lateral		l					
Nasal	m	n					
Glides/Glottal	w			j			h ʔ

[1] All data and information on the Misantla Totonac language is taken from MacKay (1999). A few phonemic and phonetic transcriptions are modified to reflect current IPA usage.

Syllable structure is described as (C)CV(V)(C)(C), where the minimal syllable is CV and the maximal syllable is CCVVCC. Long vowels are considered to be VV; there are no diphthongs in the language (although allophones of long vowels can be diphthongoid).

Of particular interest in this paper is the stress system of Misantla Totonac. MacKay (1999) describes it as a case of phonological extrametricality for nouns and morphological extrametricality for verbs, both of which occur on the right edge. Before I delve into the specifics of each, a few observations should be mentioned that apply to both nouns and verbs.

2. Universal Observations on Stress in Misantla Totonac

2.1. Secondary Stress, Syllable Weight, and Foot Size

MacKay (1999) observes that all heavy syllables are always stressed. According to her analysis, heavy syllables are those whose rime includes a long vowel nucleus (-VV) or a coda (-VC(C), -VVC(C)). Light syllables are therefore those whose rime consists of only a plain vowel (-V). Based on MacKay's characterization, syllable weight for heavy and light syllables may be represented as follows in terms of their moraic weight:

(3)

Heavy syllables		Light syllables
σ	σ	σ
/ | \	/ | \	/ |
/ μ μ	/ μ μ	/ μ
/ | |	/ | |	/ |
C V V	C V C	C V

Light syllables are thus those with only one mora, whereas heavy syllables are those with two or more moras (additional coda consonants may contribute more moras). We use the Weight-to-Stress Principle to model this property of stress under an Optimality Theory framework:

(4) **Weight-to-Stress Principle (WSP)**
All heavy syllables are stressed; all light syllables are unstressed.

In Misantla Totonac, WSP does not seem to be constrained by any type of clash. A word may have only heavy syllables, in which case all of them are stressed, and there is no limit to the

number of consecutive stressed syllables allowed (stress is indicated with grave accent for the time being; primary stress not considered):

(5)	a.	/min-paa-luu/	[mìm.pàa.lùu]	'your intestines'	(p. 74)
	b.	/qiiɬ-tun/	[qɛ̀ɛɬ.tùn]	'moonshine'	(p. 74)
	c.	/kinɻan ik-laa-paa=stak-wa/	[ki.nɻàn ìk.làa.pàa.stɛ̀k]	'we remembered them'	(p.187)

If all syllables are light, then no (secondary) stress is assigned (again, ignoring primary stress assignment for now):

(6)	a.	/skɻiha/	[skɻ.ha]	'tasty'	(p.305)
	b.	/ɻa- ʧɻapa/	[ʔɻa.ʧɻa.pa]	's/he grabs X for a moment'	(p. 334)
	c.	/laka-mɛsa/	[la.ka.mɛ.sa]	'on the table'	(p. 217)

There also appears to be no or an unknown limit to the number of consecutive unstressed syllables, even when primary stress is accounted for (indicated with acute accent). The highest number of consecutive unstressed syllables attested is at least four (see (7b,c)):

(7)	a.	/kin-quʃa-ʧɻaqɻaɻ/	[kìɴ.**qɔ.ʃa.ʧa.**qɛ́ɛ̨]	'he washes my back'	(p. 230)
	b.	/ɻala-saqalii/	[**ʔɻa.la.sa.qa.**líi]	'don't bother X!'	(p.207)
	c.	/ɬtata-ta-wɻila/	[**ɬta.ta.ti.wɻi.**lá]	'he sleeps sitting'	(p.225)

The high number of consecutive stressed as well as unstressed syllables in (5), (6), and (7) pose a problem for determining foot size in Misantla Totonac. Three or more consecutive stressed syllables (5a,c) suggest a foot can be unary (or degenerate). The high number of consecutive unstressed syllables, however, provides little evidence for foot size and foot assignment. If anything, Misantla Totonac doesn't seem to "care" about the concept of foot, only about moraic weight. This would suggest that constraints related to foot are likely to be ranked quite low.

2.2. Primary Stress

Primary stress is assigned either on the final syllable or the penultimate syllable, depending on extrametricality conditions (to be discussed in Section 3). The target of primary stress is not necessarily a heavy syllable, as seen in (7c) above and also in (8) below:

(8)	a. /snapu̱/	[sná.pu̱]	'gnat'	(p, 74)
	b. /maa-kitsis/	[màa.kí.tsis]	'five'	(p. 74)
	c. /tsu̱tsu̱/	[tsu̱.tsu̱]	's/he smokes'	(p. 114)
	d. /ni-kin-paʃ-ii-ti/	[ni.kìm.pá.ʃiit]	'bathe me!'	(p. 146)
	e. /u̱ka̱-la(ɬ)/	[ʔu̱.ka̱ɬ]	's/he is above'	(p. 212)

This suggests primary stress assignment may be (i) autonomous from WSP, (ii) "immune" to WSP, or (iii) be affected by a higher-ranking constraint. Note that the final syllables in (the phonetic forms of) (8b,d,e) would be considered heavy, and yet do not bear any stress.

Since primary stress is always final or penultimate, we may characterize primary stress assignment as right-dominant, with the following constraint:

(9) **RIGHTMOST**
Primary stress must be assigned on the rightmost syllable.

RIGHTMOST would be ranked lower than whatever constraints are responsible for extrametricality, but higher than WSP (since light syllables in final or penultimate position can receive primary stress, but WSP penalizes light syllables for bearing stress at all). Moreover, constraints related to feet would be ranked lower than WSP, since (secondary) stress patterns follow WSP strictly:

(10) *Extrametricality constraints* >> RIGHTMOST >> WSP >> *Foot/parsing constraints*

2.3. The prosodic word

Both nouns and verbs can have numerous affixes (prefixes as well as suffixes) attached to them. The affixes (both derivational and inflectional) are treated as part of the prosodic word, which can only bear exactly one primary stress (as observed in previous examples). The grammatical word therefore appears to match the prosodic word in this language, since primary stress is assigned to a word with all its morphemes—root and affixes—as one unit.

There is one wrinkle, however. Clitics (of which only two are mentioned in MacKay's research, /=ʃtn̰/ PAST and /=ʧṵ/ 'already') are lexically stressed, and are never factored into nor affect primary stress assignment:

(11) a. /sta̰a̰-jaa-tat=ʃtn̰/ [sta̰a̰.jáa.tat.ʃtàn] 'you were selling (something)' (p. 73)
sell-IMPF-2SUB.PL=PAST

b. /sta̰a̰-jaa-tat/ [sta̰a̰.jáa.tat] 'you are selling (something)'
sell-IMPF-2SUB.PL

The addition of the past tense enclitic /=ʃtn̰/[2] in (11a) does not affect the assignment of primary stress on the stem, which is on the same syllable [jáa] in (11b) without the clitic. In other words, we may treat their cliticization process as post-lexical (i.e., phono-syntactic).

3. Extrametricality in Primary Stress Assignment in Nouns and Verbs

As previously mentioned, MacKay (1999) characterizes nouns as exhibiting phonological extrametricality and verbs morphological extrametricality. For nouns, certain types of final syllables are extrametrical, whereas for verbs, inflectional suffixes trigger extrametricality on the final syllable. The interesting aspect in the nominal case is that final syllable extrametricality appears to be sensitive to syllable weight, but not according to the same heavy-light scale established earlier in this paper for secondary stress. For the verbal case, inflectional suffixes that reduce to one segment and are reanalyzed as a coda on a previous syllable will "transfer" their extrametricality to that syllable.

[2] Note that the use of the equal sign to indicate cliticization here is not adopted in MacKay (1999), where hyphens are used equally for affixes and clitics. In her book, the equal sign appears to be used for roots that are originally compositional or a result of compounding. For such cases, I will use the underscore to replace MacKay's equal sign.

Another note must be mentioned regarding the stress on the clitic. MacKay does not distinguish primary stress from secondary stress in her transcriptions, only through rule-based description, so it is unclear whether the clitic actually bears secondary or primary stress. Since clitics are by definition phonologically parasitic and cannot occur as free morphemes, I interpret them to be realized as secondary stress. Regardless, which one is the actual case does not affect the analysis in this paper.

3.1. Nominal Extrametricality

For nouns, primary stress is assigned from the right edge. However, certain types of syllables in final position will "defer" primary stress to the penultimate syllable. These include (i) light syllables as previously defined for WSP, i.e., -CV syllables, and (ii) -CVC syllables where the final consonant is a coronal obstruent (i.e., /t, s, ɬ, ʃ/, but not /ʦ, ʧ/ because these two do not occur syllable-finally):

(12)	a. /mukskut/	[múk.skut]	'fire'	(p.74)
	b. /maa-kitsis/	[màa.kí.tsis]	'five'	
	c. /matsat/	[má.tsat]	'salt'	
	d. /paakiʃ/	[páa.kiʃ]	'beef, steer'	
	e. /kuʧiɬ/	[kúʧiɬ]	'knife'	

Final syllables ending in any other consonant, or in long vowels, do receive primary stress[3]:

(13)	a. /qiiɬ-tun/	[qèɛɬ.tún]	'moonshine'	(p. 74)
	b. /sapa̰p/	[sə.pá̰p]	'warm'	
	c. /slapuq/	[sla.pɔ́χ]	'soft'	
	d. /laawa̰a̰/	[làa.wá̰a̰]	'meat'	(p. 41)

Where secondary stress is sensitive to a weight scale in which the boundary for light syllables ends with those with a short vowel for the rime, primary stress is sensitive to a different scale where that boundary extends to include syllables ending in a coronal obstruent. This makes it impossible to apply an extrametricality constraint which relies on the same scale as WSP. It also makes it difficult to account for the extrametricality through a universal OT constraint. One could tentatively stipulate a language-specific constraint that bans parsing of final stressed syllables with -V or -$VC_{[+cor, -son]}$, and this would be ranked higher than RIGHTMOST:

(14) ***STRESS-FINSYLL[-V($C_{[+cor, -son]}$)]**
Final stressed syllables ending in a short vowel or a short vowel and a coronal obstruent coda are banned.

[3] Some exceptions do occur in the language, which MacKay (1999) treats as lexically specified (pp. 75-76).

Although this is not the best solution for the problem, it can at least be observed that in this language, subparts of the phonology are sensitive to the same scale but in different ways. In the next section, we will see this differential sensitivity again in one of the exceptions to verbal extrametricality.

3.2. Verbal Extrametricality

Primary stress on verbs is assigned according to RIGHTMOST. If a verb ends with the root, the final syllable is always stressed whether that syllable is heavy or light:

(15)	a. /(ut) ɬuula/	[(ʔú̱t) ɬù̱u.lá]	's/he does X'	(p. 76)
	b. /(ut) qa̱wa̱/	[(ʔú̱t) qa̱.wá̱]	's/he talks'	(p. 159)
	c. /(ut) qaʃmat/	[(ʔú̱t) qàʃ.mát]	's/he hears X'	(p. 154)
	d. /wi̱ʃ la̱qa̱n/	[wí̱ʃ la̱.qé̱n]	'you see X'	(p. 76)

If a verb ends with a derivational suffix, it is still the final syllable that receives primary stress:

(16)	a. /(ut) kin-sta̱a̱-ni/	[(ʔú̱t) kì.stà̱a̱.ní]	's/he sells X for me'	(p. 166)
	b. /sta̱qa̱l-ii/	[sta̱.χa̱.líi]	'it flattens'	(p. 306)

In (16a) the suffix /-ni/ is an applicative and in (16b) /-ii/ is a transitivizer (note that due to a ban on onset-less syllables, resyllabification causes what was underlyingly a heavy syllable (/qa̱l/) to become light ([χa̱])).

However, if inflectional suffixes terminate a verb, extrametricality is triggered so that primary stress is always on the penultimate syllable instead. Inflectional suffixes in Misantla Totonac include aspect and personal marking. The following examples show these unstressed inflectional suffixes in final position, /-łał/ PERF, /-ti/ PERF, /-na/ 2OBJ, /-wa/ 1SUB.PL[4]:

[4] The first person plural subject suffix is overt only in the San Marcos Atexquilapan variety of Misantla Totonac. MacKay (1999) argues that it is underlyingly there even in other varieties where it is not overt, using examples such as (18b) as evidence.

(17)	a. /ut paa_stak**-la(ɬ)**/	[ʔʊ̱t pàa.stɛ́k.**laɬ**]	's/he remembered X'	(p. 76)
	b. /wi̱ʃ ʃnaq**-ti**/	[wí̱ʃ ʃnɛ́χ.**ti**]	'you deflated/lost weight'	
	c. /ut paa_stak**-na**/	[ʔʊ̱t pàa.stɛ́k.**na**]	's/he remembered you'	
	d. /kina̱n paʃ**-wa**/	[ki.ná̱n páʃ.**wa**]	'we bathed'	

If there are two or more inflectional suffixes, primary stress still falls on the penultimate syllable. The following examples shows these inflectional suffixes stacking at the end of the verb, /-jaa/ IMPF, /-tat/ 2SUB.PL, and again, /-wa/ 1SUB.PL:

(18)	a. /wi̱ʃin sta̱a̱**-jaa-tat**/	[wi̱.ʃín stà̱a̱.**já̱a̱.tat**]	'y'all sell X'	(p. 76)
	b. /kina̱n paʃ**-jaa-wa**/	[ki.ná̱n pa.**ʃáa**]	'we bathe'	(p. 77)

In (18b), MacKay (1999, pp. 77, 89-91) argues that /-wa/ is elided through two phonological processes specific to Misantla Totonac: (i) the final vowel is deleted when a -CV suffix is attached to a vowel-final stem, and (ii) /-w/ is further deleted by stray erasure since [-w] is not allowed syllable-finally. The suffix is however still "active" and covert, allowing primary stress to fall on what is phonetically the final syllable but abstractly the penultimate syllable. At first glance, the preservation of a "ghost" syllable could be modeled in OT through a faithfulness constraint, such as IDENT-SYLL which preserves input syllables at the abstract level to the output, in conjunction with the specific constraints that ban the segments from appearing in the output.

However, this hypothesis falls apart when the following data are concerned, where the final vowel of a –CV suffix is deleted, but the onset remains and is resyllabified as a coda to the previous syllable, and somehow that syllable must now be unstressed:

(19)	a. /ut ta-ʃtu-la(ɬ)/	[ʔʊ̱t tá.ʃtuɬ]	's/he began'	(p. 78)
		*[ʔʊ̱t ta.ʃtúɬ (σ)]		
	b. /wi̱ʃ ta-nuu-ti/	[wí̱ʃ tá.nu̱u̱t]	'you entered'	(p. 79)
		*[wí̱ʃ ta.nʊ̱́u̱t (σ)]		

This is what MacKay characterizes as upward percolation of extrametricality, where an [+EM] feature is preserved and moves upward in the prosodic tier to the preceding syllable when the final syllable is lost. This is completely at odds with her previous explanation for /-wa/, where segment loss does not contribute to syllable loss. The problem is further complicated by the fact

that full deletion of the perfective /-ti/ also occurs sometimes due to morphophonemic rules, and yet in such cases, extrametricality still transfers to the previous syllable:

(20)	a.	/wi̱ʃ ʃtuqu-ti/	[wí̱ʃ ʃtɔ́.qɔ]	‘you sewed X’	(p. 78)
			*[wí̱ʃ ʃtɔ.qɔ́ (σ)]		
	b.	/wi̱ʃ łtata-ti/	[wí̱ʃ łtá.ta]	‘you slept’	
			*[wí̱ʃ łta.tá (σ)]		

To add a final complication, the reduced variant [-n] of the 2OBJ suffix /-na/ apparently blocks transfer of extrametricality:

(21)	a.	/kit ik-taa-ti̱hwan-jaa-**na**/	[kít ʔì̱k.tàa.tɛ̱̀h.wa.náa**n**]	‘I look for y’all’	(p. 80)
	b.	/ut la̱qa̱n-na/	[ʔú̱t la̱.χɛ̱́n]	‘s/he saw you’	

Interestingly, MacKay appeals to weight sensitivity to explain how the reduced inflectional [-n] overrides the [+EM] feature. She argues that syllables ending in [-n] always receive secondary stress and this can be carried over to this exceptional case of verbal extrametricality. Although she does not mention it, this line of argument seems at least partially supported by the fact that the reflexive inflectional suffix /-kan/ always receives stress (if her transcriptions are correct, the following data runs counter to her assertion that inflectional suffixes in final position never receive stress):

(22)	a.	/utun ta-laa-la̱qa̱n-kan/	[ʔu̱.tún ta.làa.la̱.qɛ̱̀ŋ.kán]	‘they see each other’ (p. 200)
	b.	/utun ta-laa-ti̱hwan-kan/	[ʔu̱.tún ta.làa.tɛ̱̀h.wɛ̀ŋ.kán]	‘they look for each other’ (p. 198)

In summary, the following suffixes and conditions license or block extrametricality:

(23) **Verbal Extrametricality Triggered by Inflectional Suffixes**

	Licensed	Transferred	Blocked/Absent	Unknown (never in final position)
a.	/-tat/ 2SUB.PL			
b.	/-la(ɬ)/ PERF1	[-ɬ] PERF1		
c.	/-ti/ PERF2	[-t], [-Ø] PERF2		
d.	/-na/ 2OBJ		[-n] 2OBJ	
e.			/-kan/ REFL	
f.				/-jaa/ IMPF
g.	/-wa/ 1SUB.PL		[-Ø] 1SUB.PL	

A generalization can be reached where those syllables or allomorphic segments in coda-position that do trigger extrametricality (either tautosyllabically, or through percolation) would be considered to be light under the weight sensitivity scale established for nominal extrametricality (but not the one for secondary stress assignment). These are outside the box in the chart, excluding imperfect /-jaa/. On the other hand, those syllables or allomorphic segments in coda-position that do *not* trigger or transfer extrametricality (inside the box) would be considered heavy, with the exception of the hypothesized silent but syllabically active allomorph [-Ø] for the 1st person plural subject suffix.

This last exception is hard to explain away when we have the silent allomorph for /-ti/ PERF2 resulting in transference of extrametricality. Additionally, where reduced suffixes [-ɬ] PERF1 and [-t] PERF2 do transfer extrametricality to the previous syllable, these preceding syllables may already contain a long vowel and thus be considered heavy, and yet they are still unstressed (as seen in (19b)). There is thus no truly generalizable account to explain why silent segments would block extrametricality in one case and not in another, or why transfer of extrametricality is sensitive to weight when there is a resyllabified coda (i.e., [-n] blocks transfer, but [-ɬ] and [-t] do not).

One possible rescue is to stipulate that the reduced ("deleted") /-wa/ 1SUB.PL is actually still abstractly [-w] even though it is phonetically silent. Similarly, one would argue the silent allomorph of the perfective /-ti/ to be abstractly [-t] as well. If that is the case, one can now clearly define inflectional affix extrametricality as being triggered only by (i) a word-final affix with a final vowel (in which case the monosyllabic affix itself is extrametrical), or (ii) a word-final affix with a syllabic coda in the output that is a coronal obstruent (which covers all the reduced affixes where the consonantal segment is reanalyzed as a coda in the output). Put more succinctly, the (albeit very clunky, for now, and language-specific) constraint would be phrased as follows:

(24) ***STRESS-FINSYLL[INFLCODA{-Ø, -C$_{[+cor, -son]}$}]-O**

Stress is banned where, in the output, a word-final syllable contains an inflectional suffix (part or whole) where the coda is either null or a coronal obstruent.

This would mean that verbal extrametricality is sensitive to the weight scale in the same manner as nominal extrametricality, with the only major difference being that nominal extrametricality looks at the entire rime (i.e., short vowel and zero or coronal obstruent coda) of the syllable to determine extrametricality of that final syllable, whereas verbal extrametricality looks solely at the coda (zero or coronal obstruent coda) to determine extrametricality of that final syllable. Nasal [-n] and [-w] are sonorants, so they are heavy and attract stress, blocking or preventing the extrametricality condition.

Although this proposal is admittedly not necessarily an attractive one, one of the major advantages is that we can appeal to there being one weight scaling method for primary stress, and the difference between nouns and verbs can be attributed to separate cophonologies which apply this weight scaling method via constituents of different sizes, but nonetheless via the same conceptual weight scaling method. Let me propose WSP-EM as a separate weight scaling method from that for secondary stress assignment, WSP. Additionally, I propose that WSP-EM, the one responsible for determining extrametricality conditions for primary stress assignment, can be subcategorized in terms of the size of the constituent they probe as well as direction:

(25) **WSP-EM(-L/R)**

Weight-to-stress principle governing extrametricality conditions (from the left edge or the right edge).

(26) a. **WSP-EM-R[rime]** b. **WSP-EM-R[(Infl-)coda]**

Weight-to-stress principle governing extrametricality conditions from the right edge, probing (a) the rime or (b) the coda (of an inflectional affix).

The cophonology for nouns would have WSP-EM-R[rime] for primary stress assignment, replacing (14) *STRESS-FINSYLL[-V($C_{[+cor, -son]}$)]. And the cophonology for verbs would have WSP-EM-R[Infl-coda] for primary stress assignment, replacing (24) *STRESS-FINSYLL[INFLCODA{-Ø, -$C_{[+cor, -son]}$}]-O. Both of these new proposed constraints would be ranked higher than RIGHTMOST so that primary stress will not be assigned on an extrametrical syllable. The overall ranking of constraints is thus modified from (10) to (27) and (28) for nominal and verbal cophonologies:

(27) Constraint ranking in cophonology for nominal stress
WSP-EM-R[rime] >> RIGHTMOST >> WSP >> *Syllable-parsing constraints*

(27) Constraint ranking in cophonology for verbal stress
WSP-EM-R[Infl-coda] >> RIGHTMOST >> WSP >> *Syllable-parsing constraints*

Since monosyllabic roots do occur and they are obligatorily stressed, as observed in (28), let us add the following constraint (29) which must be ranked the highest (otherwise, WSP-EM-R *may* knock out the attested stressed candidate too early):

(28) a.	/pap/	[páp]	‘moon’	(p. 72)
b.	/ʧa/	[ʧá]	‘tortilla’	(p. 73)
c.	/ʃqaa/	[ʃqáa]	‘(s/he) harvests’	(p. 321)
d.	/ʦi̯t/	[ʦí̯t]	‘black’	(p. 354)

(29) **Lex≈Prwd**

Every word must have at least one primary stressed syllable.

Without Lex≈Prwd, the attested (28b) would be knocked out as a candidate by WSP-EM-R[rime] and WSP. With Lex≈Prwd ranked highest, tableaus (30) and (31) briefly illustrate how these ranked constraints operate on multisyllabic words:

(30)

/maa-kitsis/ 'five' (noun)	**Lex≈Prwd**	**WSP-EM-R[rime]**	**RIGHTMOST**	**WSP**	**(Syllable-parsing constraints)**
	(at least one primary stress)	Light syll: -V -$VC_{[+cor, -son]}$	(penalize per syllable distance)	Light Syll: -V	
a. [màa.kí.tsis] ←			*	**	…
b. [maa.ki.tsís]		*!		*	…
c. [máa.ki.tsìs]		*!	**		…
d. [màa.kí.tsìs]		*!	*		…
e. [màa.kì.tsís]		*!			…
f. [màa.ki.tsís]		*!			…
g. [maa.ki.tsis]	*!			**	…
h. [máa.ki.tsis]			**!	*	…
i. [máa.kì.tsis]			**!	**	…
j. [màa.kì.tsìs]	*!	*			
k. [maa.kí.tsis]			*	***!	

In Tableau (30), Lex≈Prwd eliminates all candidates without primary stress. Conversely, RIGHTMOST eliminates any candidates with more than one primary stress. Any violation of RIGHTMOST where the one primary stress is not at the right edge is turn rescued by WSP-EM-R[rime], the specific extrametricality constraint for nouns, as long as it is minimally distant from the right edge ((a) vs. (h,i)). Finally, WSP breaks the tie between (a) and (k) by penalize misassignment of secondary stress.

In Tableau (31) below for an example of a verb, the constraints work essentially in the same way to favor the attested candidate, with the only difference being the specifics of the WSP-EM-R constraint, where only the final inflectional suffix/syllable (italicized) is examined for extrametricality:

(31)

/(wɟin) stą̲a̲-jaa-tat 'y'all sell X' (verb)	**Lex≈Prwd**	**WSP-EM-R[*Infl*-coda]**	**RIGHTMOST**	**WSP**	**(Syllable-parsing constraints)**
	(at least one primary stress)	Light syll where coda: -Ø -$C_{[+cor, -son]}$	(penalize per syllable distance)	Light Syll: -V	
a. [stą̀a̲.já̲a̲.*tat*] ←			*	*	...
b. [stą̀a̲.jà̲a̲.*tát*]		*!			...
c. [stą̲a̲.já̲a̲.*tát*]		*!		**	...
d. [stą̲a̲.já̲a̲.*tat*]	*!			**	...
e. [stą́a̲.jà̲a̲.*tat*]			**!	*	...
f. [stą́a̲.jà̲a̲.*tàt*]		*!	**		...
g. [stą̀a̲.jà̲a̲.*tàt*]	*!	*			...
h. [stą́a̲.já̲a̲.*tát*]		*!	**		...
j. [stą̀a̲.jà̲a̲.*tat*]	*!			*	...

4. Conclusion

The OT proposal made in this paper regarding differential application of the Weight-to-Stress Principle (as well as different ways of scaling weight between secondary and primary stress assignment) are not ideal in terms of comparing Misantla Totonac to other languages by way of universal constraints. However, the "individualized" constraints proposed do capture the descriptive facts regarding extrametricality in Misantla Totonac in a systematic way. Moreover, these constraints (in particular the WSP-EM ones) are not entirely contra the spirit of an OT framework, since (i) extrametricality is known to have directionality edge-wise, (ii) different languages have different weight scaling methods, some of which seem to appeal to and correspond neatly to a sonority hierarchy, while others do not. What might be new here is the idea that WSP could "probe" the coda alone to determine syllable weight, without regard to nucleus length, as we saw in the verbal inflectional suffixes. [Would you happen to know if something like this actually occurs in other languages and know of any research that might have a similar approach? I'd appreciate any pointers!]

Reference

MacKay, Carolyn J. 1999. A Grammar of Misantla Totonac. Salt Lake City, UT: The University of Utah Press.