△ D E L T A

Onsets and syllable prominence in Umutina

Onsets e proeminência silábica em Umutina

W. Leo WETZELS
(Vrije Universiteit Amsterdam - VU, Universidade de São Paulo - USP)

Stella TELLES
(UFPE)

Ben HERMANS
(Meertens Instituut, Vrije Universiteit Amsterdam - VU)

RESUMO

No Umutina, a distribuição do acento primário é sensível ao grau de sonoridade das vogais nucleares nas duas últimas sílabas da palavra, sendo essa uma propriedade compartilhada com algumas outras línguas. O que torna o Umutina particularmente interessante é o fato de que a baixa sonoridade dos onsets em sílaba final de palavra impede a retração do acento para a sílaba pré-final, mesmo quando o núcleo pré-final é mais sonorante do que o núcleo final. Uma análise baseada em restrições é proposta com base na hipótese de que o que torna sílabas com onsets de baixa sonoridade proeminentes é precisamente o forte aumento de sonoridade na transição entre o onset de baixa sonoridade e o núcleo seguinte.

Palavras-chave: *acento; sonoridade; proeminência silábica.*

W. Leo Wetzels, Stella Telles, Ben Hermans

ABSTRACT

*In Umutina the distribution of main word stress is sensitive to the sono-
rity degree of vowels within a two-syllable window at the right side of
the word, a property which it shares with a number of other languages.
What makes Umutina particularly interesting is the fact that low sonorant
onsets in the word final syllable impede the retraction of stress to the pre-
final syllable, even when the prefinal nucleus is more sonorant than the
final one. A constraint analysis is proposed based on the hypothesis that
what makes syllables with low sonorant onsets prominent is the sharp
sonority rise between a low sonorant onset and the following nucleus.*

**Key-words:** *stress; sonority; syllable prominence.*

1. Introduction

In many languages heavy syllables are the preferred loci for stress
placement. In Capanahua, for instance, stress is assigned to the initial
syllable of a word unless the second syllable contains a heavy (closed)
syllable; in the latter case, the second syllable is stressed. This is illus-
trated with the following data, from Elías-Ulloa (2004).

(1) a.   stress on the first syllable
       'ni.ʃi   'rope'
       'ʔi.ko.nin   'nephew'

    b.   stress on the second syllable
       tsi.'his   'wood'
       kɨʂ.'kan.kin   'to incline'

According to current theory, the weight of a syllable is calculated
by the number of moras in the rhyme. The more moras a syllable con-
tains, the greater its weight (Hyman 1985, Hayes 1989). A syllable with
one mora is light, whereas a syllable with two is heavy. It is by virtue
of this that the heavy syllable attracts stress in a number of languages.
The following representations illustrate the different mora structure of
light and heavy syllables in terms of Hyman's model.

(2) a. light syllable b. closed heavy syllable c. open heavy syllable
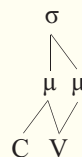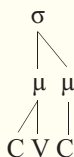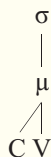
In some languages the two types of heavy syllables illustrated in (2) behave uniformly with respect to the distribution of stress, but other languages show a tripartite weight hierarchy: monomoraic syllables are light, bimoraic *closed* syllables are heavier than light syllables, while bimoraic syllables with a long vowel are the heaviest (Blevins 1995, Zec 2007).

The representations in (2) indicate that a segment in onset position cannot contribute to the weight of a syllable. Regardless of the number of consonants in the onset and their phonological characteristics, such factors are predicted to have no bearing on the weight of a syllable and its suitability as a stress attractor. This prediction is made irrespective of whether onsets are linked to the mora, as proposed by Hyman (1985), or directly adjoined to the syllable node without being dominated by a mora, as proposed in Hayes (1989).

As was shown by Everett and Everett (1984), however, this prediction is not borne out in Pirahã, an indigenous language of Brazil. Pirahã is a tone language with a length contrast for vowels. It lacks phonemic sonorant consonants. The system of consonantal phonemes is, indeed, very reduced, in which the [±voice] opposition appears to be essential: /p,t,k,ʔ,b, g, s, h/ (see Everett: 1991:205). The language does not allow consonants in the syllable coda. Pirahã distinguishes no less than five degrees of prominence for the sake of primary stress placement. Between two syllables having the same number of moras, the one *with* an onset is a stronger stress attractor than the one without. The *nature* of the consonant in onset position also matters: with regard to stress placement, a syllable with a voiceless consonant in the onset takes priority over a syllable with a voiced onset consonant, everything else being equal. The main stress in this language can be predicted as follows: within a three syllable window at the right side of a word, the most prominent syllable is stressed, where prominence is defined in

W. Leo Wetzels, Stella Telles, Ben Hermans

terms of the scale in (3). If all three syllables in the window are equally prominent, the rightmost syllable is stressed.
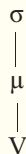
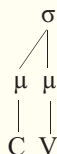(3) Pirahã prominence scale (Everett and Everett, 1984)
   PVV > BVV > VV > PV > BV
   (P = voiceless consonant; B = voiced stop; VV = long vowel or diphthong; V = short vowel)

The observation that onsets may add 'weight' to the syllable has lead Topintzy (2006) to propose that onsets contributing to weight are moraic, as illustrated in (4).

(4)   a. an onsetless syllable   b. a syllable with a moraic onset

$$\sigma \qquad\qquad \sigma$$
$$| \qquad\qquad\qquad /\!\!\backslash$$
$$\mu \qquad\qquad \mu\ \ \mu$$
$$| \qquad\qquad\quad |\ \ \ |$$
$$V \qquad\qquad C\ \ V$$

Assigning moraic status to onset consonants can account for how onsets contribute to weight, but such supposition entails costs. It has been widely observed that, if languages distinguish between moraic and non-moraic coda consonants, the moraic ones are typically the more sonorous ones (cf. Blevins 1995 and Zec 2007 for overviews). If the hypothesis that moras tend to be relatively sonorous is combined with the proposal that onsets may be moraic, one would expect that, when less sonorant onsets are moraic, more sonorant onsets also are. This, however, is not generally true. As we have seen, it does not hold for Pirahã, a language in which we would expect voiced onsets to be more prominent than voiceless ones, just as it does not hold for another indigenous language of Brazil, Umutina, which is the focus of this study. In both languages, the syllables with the least sonorous onset consonants are the preferred loci for primary stress.

Accordingly, we doubt whether the consonants that add to the prominence of a syllable in Pirahã and Umutina do so because of their 'heavy', i.e. moraic, nature. We propose instead that low-sonorant onsets may contribute to syllable prominence because they create a greater sonority difference with the following nucleus than high-

sonorant onsets, as also suggested in Wetzels and Meira (2010). The idea that low-sonorant consonants make better syllable onsets than high-sonorant ones has been suggested at various places in the literature (e.g Jakobson, 1941/1968; Clements, 1990). Goedemans (1998) also argues for the relevance of the relatively sharp Onset/Nucleus (O/N) sonority rise created by voiceless onsets in his understanding of Pirahã stress. In the next section we develop an analysis of onset prominence in Umutína along these lines.

2. Prominence based on vowel sonority

Umutína is a now extinct language of the Boróro family, the latter being classified as one of the families of the Macro-Jê stock by Rodrigues, 1984. Since the earliest records, the remaining Umutina live in the *Terra Indígena Umutina* located in the area of the confluence of the Paraguay and Bugres Rivers, in Barra do Bugres, in the state of Mato Grosso. All the data are taken from a study by Telles (1995)[1].

Umutina has a somewhat more complex consonants system than Pirahã. The following consonantal phonemes must be distinguished:

(5) Consonantal phonemes of Umutina

p	t	k
b		
		ʃ
	z	ʒ
m	n	
	ɾ	
	l	

The vowel system distinguishes four degrees of aperture, as shown below:

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[1]. The identification of the Umutina stress in Telles (1995) was done impressionistically, but the relevant recorded data were later submitted to instrumental verification, which confirmed the earlier findings, with some very few exceptions.

W. Leo Wetzels, Stella Telles, Ben Hermans

(6) Vowel phonemes of Umutina

high	i	ɨ	u	least sonorant
upper mid	e		o	
lower mind	ɛ		ɔ	
low		a		most sonorant

Syllables are predominantly CV, although falling diphthongs are attested. Umutína stress is located on the syllable containing the vowel with the highest sonority in a bisyllabic window at the right side of the word, with relative sonority corresponding with the aperture degrees distinguished in the vowel system above. If both syllables in the window are equally sonorant, stress is located on the final syllable in most words, but may vary between the final and the prefinal syllable in some words, in which case there is a strong preference for final stress.

(7) a. The sonority of the final and the prefinal vowel is the same

    i.ʃa.ˈla   clear
    ma.ʃa.ˈla   long time
    zo.ko.ˈno   firefly
    ku.ʃi.pɔ.ˈrɛ ~ ku.ʃi.ˈpɔ.rɛ   much
    hi.ʒɛ.rɛ.ˈrɛ ~ hi.ʒɛ.ˈrɛ.rɛ   flee
    ʒu:ˈri ~ ˈʒu:ri   parrot species

  b. The sonority of the final vowel is higher than that of the prefinal vowel (fricative onset in final syllable)

    ba.rɔ.ˈza   sky
    i.ʃo.ri.ˈʃa   my wife
    bi.ˈʃɔ   to kill
    ki.ˈʃɔ   parakeet species

  c. The sonority of the prefinal vowel is higher than that of the final vowel (fricative onset in final syllable)

    i.ˈʃa.zo   my hair
    uˈa.sɛ   white man
    ˈo.ʒi   now
    u.ˈa.ʃi   kind of tree

d. The sonority of the final vowel is higher than that of the prefinal vowel
   (sonorant onset in final syllable)

botoɾiˈkaɾi	pig
la.ˈʃo.ɾi	long
ʃu.ˈa.ɾɛ	var. adornment
ˈtɔɾi	stone
ˈmɛ.nu	stingray
ha.ˈpa.nu	papaya
ɔ.ɾi.ˈka.no	corn beiju (var. pancake)
ˈma.mo	type of arrow
a.pa.ˈpej.nu	mat

e. The sonority of the final vowel is higher than that of the prefinal vowel
   (sonorant onset in final syllable)

ma.tu.ko.ˈɾɛ	interrogative
i.ko.mo.ˈma	Venus
lɔ.ɾu.ˈnɔ	ritual instrument
tuj.ˈnɔ	toucan
huazawej.ˈnɔ	bird, species
jo.ˈwa	white-lipped peccary
bu:ˈjɛ	piranha

f. Prefinal syllable without onset

aminuˈa	you walked
uˈo	mollusk
ˈbão	swollen

g. Exceptions

mi.ˈʃi.na	old man, grandfather
pi.ˈkɛ.na	ugly
a.maˈtatɨ	to dance

Only very few words were found which behave exceptionally with regard to the above generalizations, some of which are provided in (7g) above.

Plural nouns may be formed by the substitution of the word-final vowel of the singular form by a vowel of unpredictable quality or by the suffixation to the singular form of the inherently stressed plural morpheme –*sé*. Nouns with an 'ablaut' plural tend to maintain the stress position as it occurs in the singular, even when the last vowel is of higher sonority. We will sidestep the issues of plural forms here.

W. Leo Wetzels, Stella Telles, Ben Hermans

In the following analysis we provide an OT account of the part of the data presented in (7), which have a fricative or a sonorant consonant in the onset of the final syllable. We will abstract away from the variable behavior of the words provided in (7a), which we will treat as having systematic word-final stress.

The main stress window of Umutína is bisyllabic and located at the right word edge. This means that in Umutína the following Alignment constraint is high ranked.

(8) HeadFoot-Right
The right edge of the main foot is aligned with the right edge of the word.

Within the foot stress gravitates to the right, everything else being equal, indicating that Ft-RightHeadedness is active in Umutína. We formulate this constraint in

(9) Ft-RightHeadedness
The head of a foot is located at the right.

Retraction to the left, induced by the greater sonority of the prefinal vowel can be explained by a set of constraints that are in a stringency relation, as proposed by de Lacy (2002, 2006). These constraints are formulated in (10).

(10) a. *FootHead $\leq$ a
A Foot Head may not contain a vowel with the sonority of a low vowel or less.

b. *FootHead $\leq \{\varepsilon, \mathfrak{o}\}$
A Foot Head may not contain a vowel with the sonority of a lower mid vowel or less.

c. *FootHead $\leq \{e, o\}$
A Foot Head may not contain a vowel with the sonority of a mid vowel or less.

d. *FootHead $\leq \{i, u\}$
A Foot Head may not contain a vowel with the sonority of a high vowel or less.

These constraints penalize vowels in the head position of a foot to the degree that they have lower sonority. High vowels incur four violation marks, because they violate all four constraints; upper mid vowels earn three violation marks, lower mid vowels two, and low vowels one.

(11) sonority driven stress with constraints that are in a stringency relation

	stressed a	stressed ɛ, ɔ	stressed e, o	stressed i, u
*FootHead ≤ a	*	*	*	*
*FootHead ≤ {ɛ, ɔ}		*	*	*
*FootHead ≤ {e, o}			*	*
*FootHead ≤ {i, u}				*

This tableau shows that a stressed vowel of a given sonority degree harmonically bounds a stressed vowel of less sonority.

The four constraints in (11) dominate Ft-RightHeadedness, the constraint in (9). This ranking ensures that the final syllable will be stressed unless there is vowel to the left of the final vowel with greater sonority than the final vowel. This is clarified in the tableau in (12). The sonority constraints are abbreviated under the general term 'Sonority'.

(12) SONORITY » Ft-RightHeadedness

ʃuarɛ	SONORITY	Ft-RightHeadedness
☞ ʃu.(ˈa.ɾɛ)	*	*
ʃu.(a.ˈɾɛ)	**!	

'Sonority' must be dominated by HeadFoot-Right (8), because retraction to the left, even to greater sonority, cannot exceed the bisyllabic window. We show this with the tableau in (13).

(13) HeadFoot-Right » SONORITY » Ft-RightHeadedness

laʃori	HeadFoot-Right	SONORITY	Ft-RightHeadedness
☞ la.(ˈʃo.ɾi)		***	*
la.(ʃo.ˈɾi)		****!	
(ˈla.ʃo).ɾi	*!	*	**

W. Leo Wetzels, Stella Telles, Ben Hermans

3. Onset prominence

The most intriguing characteristic of Umutína phonology is the fact that the nature of the onset can determine stress position. In fact, (vowel) sonority driven stress is overruled by the presence of a voiced or voiceless stop in the onset of the final syllable. This means that the final syllable is stressed even if the sonority degree of its nucleus is lower than that of the prefinal nucleus. This phenomenon is illustrated by the forms in (14).

(14) a. The onset of the final syllable is a voiceless stop

ɛ.ba.ˈki	cobra
hɛ.ka.ˈpu	betrayed
ba.la.ˈtu	vulture
be.ɾe.ˈtɨ	red
a.ˈpɔ	company
bɔ.za.ˈtɔ	buried
a.lo.po.ɾi.ˈka	cayman
ua.ɾi.ˈpo	fish, species
i.boj.ˈka	my bow

   b. The onset of the final syllable is a voiced stop

ho.lo.ˈbi	monkey, species
a.ɾi.ka.ˈbo	dog
a.ˈbe	to take
pu.a.ˈbo	bird, species

Observe that the bilabial /b/ is the only voiced stop of Umutina. Only final syllable onsets containing stops impede the stress rule to access the prefinal syllable. Onsets that contain a fricative or a sonorant consonant do not have that effect, as already shown in (7). The fact that onsets containing a stop can influence the position of stress is unique, as far as we know.

As stated in section 1, we consider that the property which makes syllables with low-sonority onsets more prominent than other syllables, in Pirahã as well as in Umutina, is the relatively sharp sonority rise from the low-sonority onset to the high sonority nucleus. Consider the sonority hierarchy for consonants as given below.

(15) Sonority hierarchy for consonant classes

Voiceless stops < Voiced stops < Voiceless Fricatives < Voiced Frivatives < Nasals < Liquids < Glides < Vowels

    1   2   ↑   3   4   5   6   7   8

             ↓

         Umutina
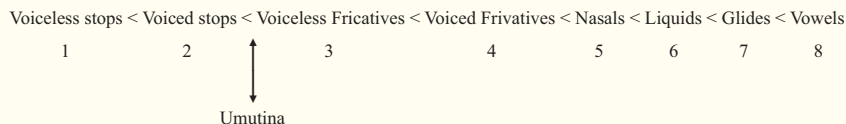
It is generally agreed that syllables tend to exhibit a sonority profile that raises from the syllable margins to the nucleus, called the *Sonority Sequencing Principle* by Clements (1990). In the hierarchy provided in (15), different classes of consonants are ranked in terms of their relative sonority. Some variation among the categories of the hierarchy in (15) are possible, especially among the lowest sonority classes, such as observed in Pirahã, where voiceless stops and fricatives are categorized together in a single class of voiceless consonants as opposed to the class of voiced consonants. In terms of sonority transitions, the preferred syllable is one in which the sonority rise is maximal from the onset to the nucleus, and, if a coda exists, with a minimal sonority fall from the nucleus to the coda. We have seen that in Pirahã syllables with a voiceless onset consonant are more prominent, i.e. are stronger stress attractors, than syllables with a voiced onset consonant. The consonant system of Umutima contains voiced and voiceless stops next to fricatives, nasals, and liquids, which provides the possibility of creating a different cut-off point on the sonority scale than the one that is relevant in Pirahã. As indicated in (15), in Umutina the low sonority cut-off point is created after the class of voiced stops. As in Pirahã, in Umutina the use of the different O/N transitions for creating degrees of syllable prominence is dichotomic, not gradient, such as the way in which the sonority difference of the vowel system is explored in this language. We may therefore collapse the categories that are relevant for the stress distribution in Umutina as in (16), and formulate in (17) the constraint that militates against the occurrence of low sonorant onsets in the dependent position of a foot:

(16) [-sonorant, -continuant] < {[+continuant], [+sonorant]}

(17) *Dpt Onset [-sonorant, - continuant]
     A syllable onset in the dependent position of a foot may not contain a
     stop

W. Leo Wetzels, Stella Telles, Ben Hermans

In Umutina this constraint dominates 'Sonority', which in turn dominates Ft-RightHeadedness. We show this with the tableau in (18), where the form *bala'tu* (7a) is evaluated.

(18) Dpt Onset/Stop » SONORITY » Ft-RightHeadedness

balatu	Dpt Onset/Stop	SONORITY	Ft-RightHeadedness
☞ ba.(la.ˈtu)		****	
ba.(ˈla.tu)	*!	*	*

The syllable *tu* has a stop onset in Umutína. In the second candidate in (18), the syllable *tu* is located in the foot's dependent position. This constitutes a violation of DptOnset/Stop. Despite the fact that 'Sonority' is only mildly violated as compared to the first candidate, the high ranking of DptOnset/Stop selects the first candidate as optimal. On the other hand, a high sonority onset in the final syllable does not inhibit left retraction to a higher sonority vowel. This is illustrated in (19) with the form *uˈa.sɛ* (7c).

(19) Dpt Onset/Stop » SONORITY » Ft-RightHeadedness

uasɛ	Dpt Onset/Stop	SONORITY	Ft-RightHeadedness
☞ (u.ˈa.sɛ)		*	*
(u.a.ˈsɛ)		**!	

A fricative does not belong to the class of consonants that are banned from the onset of a dependent syllable. It can therefore not create a violation of DptOnset/Stop, regardless of its position inside the foot. Consequently, it is left to 'Sonority' to determine which candidate is optimal.

We must explain why only the onset of the *final* syllable is able to determine the position of stress. Consider the following forms:

(20) a. The onset of the prefinal syllable is a stop
      ku.ʃi.pɔ.ˈɾɛ   much
      ma.tu.ko.ˈɾɛ   interrogative
   b. The onset of the final and the prefinal syllable is a stop
      ɛ.ba.ˈki   cobra
      hɛ.ka.ˈpu   betrayed
      a.ɾi.ka.ˈbo   dog

In all the forms in (20), the prefinal syllable has a stop in onset position. With the constraints discussed so far, it is impossible to predict final stress in these words. This is shown in the two tableaux in (21).

(21) a. Dpt Onset/Stop » SONORITY » Ft-RightHeadedness

kuʃipɔrɛ	Dpt Onset/Stop	SONORITY	Ft-RightHeadedness
ku.ʃi.(pɔ.ˈrɛ)	*!	**	
☻ ku.ʃi.(ˈpɔ.rɛ)		**	*

b. Dpt Onset/Stop » SONORITY » Ft-RightHeadedness

ɛbaki	Dpt Onset/Stop	SONORITY	Ft-RightHeadedness
ɛ.(ba.ˈki)	*	**!**	
☻ ɛ.(ˈba.ki)	*	*	*

In the first candidate in the tableau (21a) the prefinal onset occupies a dependent position in an iamb. It therefore violates DptOnset/Stop. In the second candidate, the prefinal onset occupies the head position of a trochee, where it does not violate DptOnset/Stop. Since this constraint dominates 'Sonority', and, by transitivity, Ft-RightHeadedness, it is predicted that the second candidate is optimal. This is incorrect, as shown by the mask.

In the tableau (21b) both candidates score equally bad with respect to the constraint DptOnset/Stop. This is caused by the fact that in the word ɛ.ba.ki both the final and the prefinal syllable have a stop onset. Therefore, no matter whether an iamb or a trochee is built, it will always be the case that a stop onset is located in the foot's dependent. Since DptOnset/Stop does not discriminate between the candidates, the decision is passed over to the next constraint, which is 'Sonority'. The best candidate with respect to this constraint is the second candidate, in which the stressed syllable contains the most sonorous nucleus. It is thus predicted that the second candidate is the optimal one. This is incorrect, as is again indicated by the mask.

In order for the grammar to designate the forms with final stress as optimal, the onset of the prefinal syllable must be made irrelevant for the distribution of stress in words which have a high sonorant onset in the last syllable, in which the prefinal syllable contains the (prominent) stop onset, and of which the nuclei of the last two syllables are of equal

sonority: *ku.ʃi.(pɔˈɾɛ)*. Notice that, in this case, a monosyllabic final foot would be preferred over the ungrammatical trochee *ku.ʃi.(ˈpɔ.ɾɛ)* for not violating Ft-Right-headedness: *ku.ʃi.pɔ.(ˈɾɛ)*. Equally, in words which have a stop onset in both the final and the prefinal syllable, a candidate with a monosyllabic word-final stressed foot would always be preferred over a bisyllabic one for not violating DptOnset/Stop: *ɛ.ba.(ˈki)*. We can obtain these results by a low ranking of the Parse-σ constraint which requires syllables to be parsed as feet. The relevant constraint is formulated as (22).

(22) Parse-σ/HeadFoot
     A syllable must be dominated by the head foot.

If we rank this constraint below Ft-RightHeadedness, we can understand why a low sonorant onset in the prefinal syllable does not determine the position of stress. This is shown in the tableaux in (23), which also evaluate a candidate with a monosyllabic word-final foot.

(23) a. Dpt Onset/Stop » SONORITY » Ft-Right-Headedness » Parse-σ/ HeadFoot

kuʃipɔɾɛ	DptOnset/Stop	SONORITY	Ft-Right-Headedness	Parse-σ/HeadFoot
☞ ku.ʃi.pɔ.(ˈɾɛ)		**		***
ku.ʃi.(pɔ.ˈɾɛ)	*!	**		**
ku.ʃi.(ˈpɔ.ɾɛ)		**	*!	**

b. Dpt Onset/Stop » SONORITY » Ft-Right-Headedness » Parse-σ/ HeadFoot

ɛbaki	DptOnset/Stop	SONORITY	Ft-Right-Headedness	Parse-σ/HeadFoot
☞ ɛ.ba.(ˈki)		****		**
ɛ.(ba.ˈki)	*!	****		*
ɛ.(ˈba.ki)	*!	*	*	*

The previously masked candidate of (21a) *kuʃi(ˈpɔɾɛ)* is no longer preferred by the grammar. Since this candidate as well as its correlate with a final monosyllabic foot *kuʃipɔ(ˈɾɛ)* has no stop-onset in a dependent syllable, they both pass DptOnset/Stop unpenalized. Ft-Right-Headedness now prefers the word *kuʃipɔ(ˈɾɛ)* with the monosyllabic iamb over the one with the bisyllabic trochee *kuʃi(ˈpɔɾɛ)*. As is shown

in (23b), the masked candidate of (21b) *ε.(ˈba.ki)* looses against *ε.ba.(ˈki)* for violating the high ranking DptOnset/Stop.

Umutína, then, follows the strategy of avoiding a violation of the DptOnset/Stop constraint by reducing a prosodic constituent: a foot is made smaller in order to avoid a violation of the constraint DptOnset/Stop. Only a prefinal syllable must be allowed to remain unparsed by a foot. A final syllable must always be parsed. This follows from the undominated status of the Alignment constraint HeadFoot-Right (cf. the discussion accompanying the tableau in (13)).

Let us finally demonstrate that the relatively low ranking of Parse-σ/HeadFoot will not select words with a degenerate final foot when stress must go on the more sonorous prefinal syllable or when the prefinal syllable has no stop-onset. Consider the tableaux in (24) and (25).

(24) DptOnset/Stop » SONORITY » Ft-Right-Headedness » Parse-σ/HeadFoot

holobi	DptOnset/Stop	SONORITY	Ft-Right-Headedness	Parse-σ/HeadFoot
☞ ho(lo.ˈbi)		****		*
ho(ˈlo. bi)	*!	***	*	*
ho.lo.(ˈbi)		****		**!

The word *holoˈbi* has final stress, with a high sonorant onset in the prefinal syllable. The candidate words with final stress do not violate DptOnset/Stop nor Ft-Right-Headedness and tie on Sonority. Consequently Parse-σ selects the candidate with the final iamb. In the tableaux in (25) a number of candidates are evaluated for underlying sequences which have a high sonorant-onset in the last syllable and in which the prefinal syllable contains a nucleus of higher or equal sonority than the one in the final syllable. For all these candidates, a bisyllabic foot is preferred over a monosyllabic one.

W. Leo Wetzels, Stella Telles, Ben Hermans

(25) DptOnset/Stop » SONORITY » Ft-Right-Headedness » Parse-σ/
HeadFoot

laʃori	DptOnset/Stop	SONORITY	Ft-Right-Headedness	Parse-σ/HeadFoot
☞ la.('ʃo.ɾi)		***	*	*
la.(ʃo.'ɾi)		****!		*
la.ʃo.('ɾi)		****!		**
maʃala				
☞ma.(ʃa.'la)		*		*
ma.('ʃa.la)		*	*!	*
ma.ʃa.('la)		*		**!
hapanu				
☞ha.('pa.nu)		*	*!	*
ha.(pa.'nu)	*!	****		*
ha.pa.('nu)		**!**		**

The candidate evaluations in (25) show that, in words with a high sonority onset in the final syllable, a trochee will always be preferred when the nucleus of the prefinal syllable contains a higher sonority nucleus, as in *la'ʃori* and *ha'panu*. In these cases Sonority decides that the bisyllabic foot is preferred over the monosyllabic one. Moreover, when the nucleus of the two final syllables is equal in sonority, the bisyllabic foot will still be preferred, this time because of Parse-σ, as is shown with the example *maʃa'la*.

Conclusion

This article analyzes a language in which low sonorant onsets contribute to prominence. Instead of assuming that low-sonorant onset consonants add prominence through weight, we have proposed that their relative prominence is caused by the greater sonority contrast they crea-te between onset and nucleus. In Pirahã the low sonorant class of onsets that contributes to syllable prominence are the voiceless consonants; in Umutina these are the non-sonorant stops. In Umutina, HeadFoot-Right and Ft-RightHeadedness together account for the default word-final stress. Prefinal stress must be enforced in case the prefinal syllable nucleus contains a vowel of higher sonority than the final one, which is why the constraint Sonority is ranked over Ft-RightHeadedness. In

turn, the Sonority constraint is dominated by the constraint DptOnset/ Stop, which ranking explains why vowels of high sonority do not attract stress to the prefinal syllable if the onset of the final syllable is a stop. Together with the undominated HeadFoot-Right and given the low ranking of Parse-σ/HeadFoot, this constraint enforces a monosyllabic word-final stress foot in case the prefinal syllable contains a stop onset with the final nuclei being of equal sonority or when the final syllable and the prefinal syllable contain a stop onset, with the prefinal syllable containing the nucleus with the highest sonority.

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