From Phonology to Discourse:

Studies in Six Colombian Languages

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Editor

Guahibo: Long Vowels and Stress

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0. Introduction

0.1. The Problem. Probably the two most problematical areas of the phonology of the Guahibo[1] language are those which relate to word stress and vowel length. Mosonyi (1964) established the fact that long vowels are phonemic in Guahibo; and, even earlier, Jiménez (1959) wrote them as geminate vowels. Jiménez wrote stress whenever it did not occur on the first syllable of the word. Mosonyi talks about an absence of stress, that is, equal phonetic intensity on all syllables in the word except on the final syllable, which is generally weak. He points out that other writers have often marked stress where what really existed was vowel length.

The author has for a long time felt the need for a more detailed study of these two phenomena, which are apparently interrelated in the Guahibo language, but there were certain problems that hindered the study. Probably the biggest difficulty in the analysis of long vowels is the fact that Guahibo native speakers do not hear them consistently. Mosonyi pointed out (correctly) that Jiménez, who happens to be a native speaker of Guahibo, did not write long vowels consistently, and the author has never found a Guahibo who can. The impetus for this study came from the experience of teaching punctuation and orthography to a class of fourteen Guahibo men in Corocito, Corregimiento of San José de Ocuné, Comisaría of Vichada, during which it was discovered that a group of individuals, by discussing each word and coming to a consensus, can establish vowel length more accurately than two people, the linguist and an informant. Even so, there was room for error. The data had to be constantly corrected. It was helpful to make columns of words containing the same number of syllables and thought to have the same vowel length and stress patterns. These lists were read to, or by, native speakers, and they would pick out the words that didn't match. This was useful in checking stress as well as vowel length. (For the purpose of this paper, a long vowel is underlined.)

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The problem in the analysis of stress is that stress is perturbed by affixation; therefore, it is essential that one be able to identify all the affixes of the language, as well as to recognize compounds. For this study the principal words used were unaffixed (and noncompound) names of animals, birds, and trees. These words were chosen because (1) they provide a large number of monomorphemic words of two to four syllables, (2) they are not "intimate nouns" (i.e., not obligatorily prefixed), and (3) they are not obligatorily suffixed; *-nae* 'tree', *-to* 'singular', etc. are removable. These noun lists included 80 two-syllable words, 159 three-syllable words, and 122 four-syllable words. Later, to study stress perturbations, verbs were also used. They were not used in the initial part of the study because it was found that the verb ending (the last syllable of the verb stem) acts like a suffix and perturbs the stress.

0.2. The Phonological Hierarchy. Guahibo phonemes (with orthographic symbols in parentheses) are:

Consonants:

p	th	t	k(c, qu)	
b		d		
		ts		
p̌(f)		s	x	h(j)
m		n		
		r		
		l		
b̌(v)			y	

Oral Vowels: Nasal Vowels:

i	ɨ (ë)	u		ĩ	ɨ̃ (ë̃)	ũ
---	-------	---		---	--------	---
e	a	o		ẽ	ã	õ

The syllable types are (C)V, (C)VV, and CVVV (see sect. 1.3).

Phonological words consist of from one to eight syllables. Their nuclei bear one primary stress. The location of the nuclei in phonological words with one or more long syllables (see sect. 1.3) is determined by the following rule: Stress occurs on the last long syllable unless that syllable is final in the phonological word. In these cases stress occurs on the second-to-last long syllable, e.g., *naesísiva* 'woodcreepers' (see sect. 2.2.2).

Loss of syllable at V + V morpheme boundaries occurs only within a phonological word (see sect. 1.4.1). Word-final short vowels (which occur in unstressed syllables) vary from voiceless to voiced, especially

preceding words beginning with a voiceless consonant.

The nuclei of the phonological phrases have extra stress and in some cases extra length. Phrases bear intonational contours and obligatory pause at their final borders. A detailed study of intonation has not been completed.

1. Long Vowels

The question concerning long vowels in Guahibo has not been whether they are phonemic but rather how they are distributed in the syllable, and, as mentioned in the introduction, the problem of informants not being able to hear them (which raises a question for the practical orthography).

All the six Guahibo vowels (a, e, i, o, u, ë) can be long, as will be seen in the examples in 1.1. Nasal vowels can also be long, e.g.: *sẽbia* 'to simmer', *jǭcạ* 'whirlpool', *quẽquẽto* 'macaw'.

1.1. Vowel Contrasts. Long vowels are phonemic in Guahibo; they contrast with short vowels, as seen in the following minimal pairs:

náva	'grass fire'	*nạva*	'dress'
énatsi	'we sat'	*ẹnatsi*	'he is busy'
mạli	'white heron'	*mạli*	'taro'
póna	'he went'	*pọnạ*	'grass'
júnare	'call him!'	*júnare*	'climb!'
cëtatsi	'he choked'	*cẹtatsi*	'he was tied'

1.2. Phonetic Timing of Long Vowels. In Guahibo, syllables with a long vowel or a diphthong are perceptually longer than syllables with a short vowel, but are not as long as two syllables. For example, the long *e* in *nẹveta* (nẹ-ve-ta) 'he waited for me' is shorter than the geminate *e*'s in the two syllables in *paneeveta* (pa-ne-e-ve-ta) 'he waited for us', but longer than the short *e*'s in *eveta* (e-ve-ta) 'he waited for him'.

1.3. Distribution in the Syllable. Guahibo has been analyzed in the past as having only the following syllable types: V, CV (Mosonyi 1964; Kondo and Kondo 1972). This caused confusion in the study of long vowels because the timing of a long vowel within a syllable and that of geminate vowels separated by a syllable boundary are not the same, as illustrated in section 1.2.

For this reason Guahibo was reanalyzed (Kondo 1980) as having also the syllables VV, CVV, and CVVV (but the latter is rare). Distribution of vowels within these syllable types was felt to be limited to the following vowel clusters (eleven diphthongs and two triphthongs):[2]

ae	ai	au	aë
ia	io	iu	
ua	ue	ui	
ëa			
uae	uai		

In the present study it was found that syllables in which long vowels occur either consist of only a long vowel or a long vowel preceded by a consonant, corresponding to the VV and CVV types already mentioned. A long vowel cannot occur in the same syllable with another vowel. The long vowels are of approximately the same length as the diphthongs, and the two (long vowel and diphthong) act in exactly the same way in rules for stress and stress perturbation (see 2.2.2).

1.4. Morphophonemic Factors Affecting Long Vowels. Long vowels in Guahibo are either basically long or generated from short vowels. Basic long vowels occur within one syllable in monomorphemes. In addition (1) the juxtaposition of identical vowels across certain stem and affix borders generates a long vowel, (2) long vowels occur in vocatives and nicknames, (3) a basic long vowel sometimes becomes shortened in compound words. These will be treated in more detail in the following sections.

1.4.1. The Juxtaposition of Vowels across Morpheme Boundaries. A phonological word may be composed of one or more morphemes. With certain affixes, the juxtaposition of identical vowels within a phonological word generates one long vowel with the resultant loss of a syllable. This happens with monosyllabic prefixes and with certain suffixes when one of the juxtaposed vowels is not already long.[3]

Three examples of affixes which "fuse" (causing two syllables to become one) are the suffixes -*a* 'by way of' and -*anë* 'plural'; and the prefix *pe-* 'his'. Examples:

tómara + -*a*	= *tómara̧* (to-ma-ra̧)
town by-way-of	'by way of the town'

tómara + -*anë*	= *tomara̧në* (to-ma-ra̧-në)
town plural	'the towns'

pe- + -*epasito*	= *pȩpasito* (pȩ-pa-se-to)
his waist	'his waist'

As already mentioned above, no fusion of syllables occurs if one of the vowels on either side of the morpheme border is already long. Examples:

pe-	+ *-ębarëto*	= *peębárëto* (pe-ę-ba-rë-to)
his	tongue	'his tongue'

nạ-	+ *ápa*	= *nạ́apa* (nạ-a-pa)
with-others	he-drank	'he drank with others'

No fusion occurs (i.e., the like vowels are rearticulated) if the prefix has two syllables, because a prefix of two syllables forms a separate phonological word (see sect. 0.2). Examples:

apo-	+ *ojóba*	=	*ápoojóbi* (a-po-o-jo-bi)
negative	he-sharpened-it		'he didn't sharpen it'

pa-	+ *ne-* +	*éveta*	=	*páneéveta* (pa-ne-e-ve-ta)
plural	me	he-waited-for		'he waited for us'

1.4.2. Long Vowels in Vocatives and Nicknames. In Guahibo, the use of a word as a vocative often demands lengthened vowels. For example:

ena	'your mother'	*ẹna*	'mother (voc)'
axa	'your father'	*axạ*	'father (voc)'
ame	'your mother-in-law'	*ạmẹ*	'mother-in-law (voc)'

The vocative forms can also be used in the third person as a referent form. Example: *ẹnạ pereba* 'mother is making cazabe'. Usually, however, the regular possessed form is used. Example: *taena pereba* 'my mother is making cazabe'.

Nicknames, like vocatives, have lengthened vowels. Guahibo nicknames are usually Guahibo or Spanish first names, shortened to two syllables. Both vowels are lengthened. These names can be used in the vocative or the third person. Examples:

name:	nickname:
Tsamani	*Tsạmạ*
Belarmina	*Bẹla*
Dolores	*Dọlọ*
María	*Marị*

It may be that this vowel length not only indicates vocative but is an affectionate form when used in the third person. In Guahibo there is still another set of kinship terms, differentiated by vowel length, which is used as a one-word greeting when the speaker is too shy to approach the person, or as a form of respect (always spoken from a distance). Example:

ame	*amȩ*	*a̧me*
'your mother-in-law'	'mother-in-law (voc)'	'mother-in-law (greeting)'

Women may use these greeting forms for both men and women. Men use them only with women; they always greet other men using the vocative form. In addition, when the vocative form is used, the vowels have extra length and stress because they occur in the nucleus of a phonological phrase, and in fact often constitute an entire phonological phrase.

<p style="text-align:center">ȩ̃na̧   #   naxâtsia   #   'Mother! Come!'</p>

1.4.3. Loss of Vowel Length in Compounds. When a morpheme with a long vowel is a part of a compound word, the vowel length is usually lost. For example, when the noun *-cóbȩ* 'hand' (which is obligatorily possessed, i.e., *pecóbȩ* 'his hand') occurs as the first member of a compound verb, the vowel length is lost, such as in *cobecánita* 'he wrestles (or plays using the hands)' and *cobetsabána* 'he has an infection on his hand'.

However, both the word *bumaëto* 'string for making a hammock (still in a ball)' and the word *bu̧maëto* 'string of a hammock (now woven in)' are derived from *bu̧* 'hammock' and *-maëto* 'string'. In one compound the length is lost, but not in the other, the result being a minimal pair for vowel length. This example illustrates the fact that this loss of vowel length is not completely predictable.

2. Stress. Although true minimal pairs for stress in Guahibo have not been found, neither is there any simple way of predicting stress. Stress in Guahibo seems to be affected by the length of the word (number of syllables), long syllables, and affixation.

2.1. Stress and Syllable Timing. Guahibo could be described as having syllable-timed rhythm, as opposed to stress-timed rhythm, which means that unstressed syllables are clearly articulated and receive perceptually the same timing as stressed syllables (Pike 1947). (This was also noticed by Mosonyi 1964, as was mentioned earlier.)

2.2. The Occurrence of Stress. The illusion that a predominant word stress may occur on any except the last syllable in a given Guahibo word may be caused partly by the syllable-timed rhythm, and partly by the occurrence of long vowels which sound like they are stressed. In order to hear well the contrast in word stress in Guahibo, it is helpful to use words with no long syllables (no long vowel nor diphthong). In such words, audible contrast does occur, as seen in the two groups of four-syllable examples in section 2.2.1.

The number of syllables in a word partially affects the placement of stress (see sect. 2.2.1). When long vowels or diphthongs occur in a word, the stress is predictable, based on the long syllable (sect. 2.2.2).

2.2.1. Stress on Monomorphemic Phonological Words with All Short Syllables. In phonological words which are monomorphemes where all the syllables are short (i.e., no long vowel nor diphthong), the placement of stress depends on the number of syllables in the word.

One-syllable words are always stressed. There are less than twenty-five of them in Guahibo. Five have a long vowel as the nucleus of the syllable; the rest have a diphthong. Examples: *bǫ* 'house', *vaë* 'medicine', *vai* 'summer'.

Stress never occurs on the final syllable of a multisyllable monomorpheme and therefore all such two-syllable words have penultimate word stress. Examples: *námo* 'fox', *mǫli* 'egret', *vǫxǫ* 'laughing falcon', *márai* 'guan'.

On three-syllable words (where all syllables are short) stress is penultimate. Examples:

amáru	'harpy eagle'	*tujúbë*	'armadillo'
cayáva	'snake bird'	*matéri*	'squirrel'

On most four-syllable words, stress occurs on the initial syllable. Examples:

túmatsina	'jaguar'	*cútsicutsi*	'kinkajou'
vátarama	'heron'	*jávasiri*	'bats'
quénanali	'brocket deer'	*cásaruru*	'boa'

The above seems to be the normal pattern. However, of fifty-five four-syllable words, eight were found to have antepenultimate stress. Examples:

maxĕneje	'Orinoco crocodile'	*bojónavi*	'otter'
cavánalo	'spoon-billed ibis'	*acádale*	'black skimmer'

ëthébërë	'curassow'	*tulíquisi*	'string of beads'
tsapánilu	'arau turtle'	*capínava*	'carp'

If we say that the above eight examples are irregular and exclude them from our statement, stress could be defined as occurring penultimate on two- and three-syllable words (monomorphemes) and initial on four-syllable words (where all syllables are short). It has not been determined where stress occurs on five-syllable words or longer, since not enough of this particular class of monomorphemes could be collected to make a worthwhile statement.

2.2.2. Stress on Monomorphemic Phonological Words with a Long Vowel or Diphthong. When long vowels (or diphthongs) occur in a monomorpheme, stress can be predicted, based on the long syllable. Stress occurs on the last long syllable unless that syllable is final in the phonological word. In these cases stress occurs on the second-to-last *long* syllable. Examples:

métsaja	'tapir'	*sisíbarë*	'hummingbirds'
vácava	'laughing falcon'	*ovébi*	'white-tailed deer'
jomovábi	'anaconda'	*janíbua*	'anole lizard'
séremali	'black hawk'	*naesisíva*	'woodcreepers'
thórothoro	'grison'	*vaitapópo*	'dove'
vacuínali	'pantera'	tsacapíolo	'nunbird'

If the last syllable of a word is long, it always sounds prominent, in spite of the fact that it does not carry stress.[4]

It has not yet been fully determined where the stress most commonly occurs on three- and four-syllable words if only the last syllable is long. In fourteen examples of three-syllable words, stress occurs on the penultimate syllable every time, as it does in monomorphemes with no long syllable. However, in ten examples of such four-syllable words, it occurs on the second syllable (antipenultimate) in all, rather than on the initial syllable as it does in most of the four-syllable monomorphemes with no long syllable. It would be helpful to have more examples before making definite conclusions. Following are some examples:

Three-syllable words:		Four-syllable words:	
acávai	'coral snake'	*piríriva*	'tropical kingbirds'
apúru	'sardines'	*itáboxo*	'sky'
camáthui	'parrots'	*abálacua*	'basket design'

At least two words are an exception to the rule of stress coming on the long syllable. They are *vatsáraca* 'chachalaca' and *sicúlitsa* 'black-headed parrot'. This may be because the words are onomatopoetic, imitations of the birds' sounds.

2.3.   Morphophonemic   Factors   Affecting   Stress.   One   major morphophonemic factor affecting stress in Guahibo is the perturbation of the stress by the addition of suffixes. Since suffixing is common in Guahibo, this perturbation is common. Only a superficial study has been done, but the results are interesting. The perturbation depends on the number of syllables in the suffix and whether it has nonultimate long syllables.

2.3.1. One- and Two-syllable Suffixes with No Nonultimate Long Syllable. When short suffixes (such as *-yǫ* 'diminutive', *-to* 'singular', *-xae* 'because', *-beje* 'dual') are added to a root, the stress shifts to the penultimate syllable of the root, unless the ultimate syllable of the root is long (contains a long vowel or a diphthong), in which case the stress shifts to that ultimate syllable. The exceptions to this rule are: (1) at least seven words where no stress shift occurs, and (2) at least three words where the stress shifts to the ultimate syllable even though it is not long.

The stress shift to the penultimate syllable is illustrated by the following examples (adding the suffix *-beje* 'dual'):

cúculi	'sungrebe'	*cucúlibeje*	'the two sungrebes'
séremali	'black hawk'	*seremálibeje*	'the two hawks'
jómocobi	'capibara'	*jomocóbibeje*	'the two capibaras'
bojónavi	'otter'	*bojonávibeje*	'the two otters'
eníanali	'puma'	*enianálibeje*	'the two pumas'

Seven words in which the stress does not shift with short suffixation are the following:

mánicu	'black crocodile'	*mánicubeje*	'the two crocodiles'
ḛtsëxë	'smoke'	*ḛtsëxëbeje*	'the two smokes'
maxéneje	'crocodile'	*maxénejebeje*	'the two crocodiles'
ëthébërë	'curassow'	*ëthébërëbeje*	'the two curassows'
tsapánilu	'arau turtle'	*tsapánilubeje*	'the two turtles'
tulíquisi	'string of beads'	*tulíquisicunu*	'strings of beads'
vatsácara	'chachalaca'	*vatsáracabeje*	'the two chachalacas'

The stress shift to the final (long) syllable of the root is illustrated by the following examples:

tsónĕ	'anteater'	*tsonĕbeje*	'the two anteaters'
jutúbai	'motmot'	*jutubáibeje*	'the two motmots'
vácavạ	'falcon'	*vạcavạ́beje*	'the two falcons'
cụnápai	'dove'	*cụnạpáibeje*	'the two doves'
vaitapópọ	'dove'	*vaitapọpóbeje*	'the two doves'
thọ́rothorọ	'grison'	*thọrothoróbeje*	'the two grisons'
abálacau	'basket design'	*abalacúabeje*	'the two designs'

Three words on which the stress shifts (with the addition of the suffix *-to* 'singular') to the final syllable of the root, even though it is not long, are the following:

capínava	'carp (pl)'	*capinaváto*	'carp (sing)'
féleleva	'pampanos'	*felelleváto*	'pampano'
álirepe	'swallow wings'	*alirepéto*	'swallow wing'

2.3.2. Two-syllable Suffixes with Nonultimate Long Syllables and Three-syllable Suffixes. These suffixes have their own stress, and are therefore separate phonological words. When they are added to a word, the suffix receives the heavier stress, while a normal stress is retained on the original stressed syllable of the word. (The stress does not shift to the final long vowel of the original word. See the definition of phonological word in 0.2). Examples (adding the suffix *-yanivạ* 'against'):

vaitapópọ   'dove'   *vaitapópọyănivạ*   'against the dove'

The following are examples of these suffixes with their stressed syllables:

Noun suffixes:		Verb suffixes:	
-jẹ́bi	'during all of'	*-bíaba*	'always'
-nẹ́xa	'for'	*-pénetụ*	'finishing rapidly'
-xáneto	'large'	*-núbena*	'standing'
-vájĕto	'size of'	*-bóbena*	'lying'
-máxĕto	'number of'	*-vánapa*	'moving around'
-cújinae	'after'	*-rĕcĕ́pa*	'leaving quickly'
-yánivạ	'against'	*-othópa*	'arriving at a certain place'
-nẹ́jevạ	'without'	*-ajáraba*	'very rapidly'

Note that all but the last three verb suffixes are stressed on the first syllable.

2.3.3. Strings of Suffixes. The rules for noun suffixes seem also to apply generally to verbs, but more study is needed, since verbs can have very long strings of suffixes and therefore have considerable stress perturbation:

májita	'to sleep; he slept'
pamájitajĕ̃	'we slept'
majitánuca	'he slept (on a bed)'
pamajitánucajĕ̃	'we slept (on a bed)'
majitánucabeje	'they two slept (on a bed)'
pamajitanucájĕ̃beje	'we two slept (on a bed)'
pamajitanucájĕ̃nua	'we also slept (on a bed)'
pamajitanucájĕ̃bĕ̃jenua	'we two also slept (on a bed)'

The affixes in the above examples are: *pa-* 'plural', *-jĕ̃* 'first person subject', *-nuca* 'standing', *-beje* 'dual', *-nua* 'also'.

2.3.4. Stress Affected by Two R-initial Suffixes. During this study it was discovered that there is some morphophonemic conditioning of stress by two particular suffixes. Two direction suffixes that begin with *r*, *-reca* 'toward east' and *-rena* 'from north or south', perturb stress differently than the other two-syllable suffixes. An "irregular" stress change occurs when the two suffixes occur following verbs ending in *-ba*, *-ca*, *-pa*, and *-va*. The stress shifts to the last syllable of the root, even though the vowel is not long. (There is no stress change with the verbs ending in *-na* and *-ne*.) Examples:

Verb		*-beje*	*-lia*	*-reca*
póna	'to go'	*pónabeje*	*pónalia*	*pónareca*
síne	'to bite'	*sínebeje*	*sínelia*	*sínereca*
rúca	'to hang'	*rúcabeje*	*rúcalia*	*rucáreca*
xáneba	'to fix'	*xánebabeje*	*xánebalia*	*xanebáreca*
tsẹ́va	'to be dry'	*tsẹ́vabeje*	*tsẹ́valia*	*tsẹváreca*
pánepa	'to escape'	*pánepabeje*	*pánepalia*	*panepáreca*

Notice in the above lists that the suffixes *-beje* 'dual' and *-lia* 'toward north or south' do not change the stress on the root, but the suffix *-reca* 'toward east' changes the stress in all but the first two. The suffix *-rena* shows the same pattern.

3. Conclusion

This study shows that in Guahibo long vowels are phonemic. If they were written in the practical orthography, they would help in the prediction of stress. Stress perturbations are fairly predictable, but there is evidence to show that there may be morphophonemic changes that occur with certain suffixes, complicating the rules.[5]

Notes

1 The Guahibo live in the eastern plains of Colombia, primarily south of the Meta River, and in the Venezuelan Territorio Federal Amazonas. The language is related to Guayabero and Cuiba. The author and her husband have studied the language since 1963, as members of the Summer Institute of Linguistics. The dialect represented in this article is that spoken near San José de Ocuné (Vichada). The author wishes to thank Florence Gerdel for her suggestions for the first draft of this article and Ruth Brend for her help with the final draft.

2 When these diphthongs occur in a stressed syllable, the first vowel is stressed except that in four (*ue, ui, uai,* and *uae*) the second vowel is stressed. This is different from Spanish, in which the *i* and *u* of a diphthong are not stressed. The timing of the two vowels in the diphthong in Guahibo is approximately equal.

3 Although it is believed that the correct phonological analysis for basic long vowels is as a sequence of vowels in a (C)VV syllable, for a number of reasons we have chosen to write them as one unit, (C)V̱, in the practical orthography. We will therefore continue to refer to such sequences as long vowels in the remainder of this paper.

4 A way to determine whether the last vowel in a word is basically long is to add a one-syllable suffix, such as -*yǫ* 'diminutive'. If the vowel is long, the stress will shift to that syllable; if the vowel is not long, it will not receive the stress when the suffix is added (see sect. 2.3.1). Examples:

ovẹbi	'deer'	*ovẹbiyǫ*	'little deer'
vaitapǫpǫ	'dove'	*vaitapǫpǫyǫ*	'little dove'

5 The question of the practical orthography is complicated by the fact that as was mentioned earlier the Guahibo themselves find it extremely difficult to hear and write long vowels. It is the observation of the author that failure to write long vowels in the Guahibo practical orthography causes the Guahibos no reading problems. Readers do not pause and reread in order to correct for a long vowel. For these reasons, a system of optionally writing long vowels by underlining the vowel has been suggested to the Guahibo leaders of one area, and they liked the idea.

Since the Guahibo have never expressed a need to write stress, and since there are apparently no minimal pairs for stress alone, it is not considered necessary to write it in the practical orthography. A nonnative speaker of Guahibo, who does not know where the morpheme breaks occur, would presumably have much more difficulty correctly placing the stress (especially if long vowels were also not written). For such a person, stress (and long vowels) should be written.

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