

# Vocalic Mora Augmentation in the Morphology of Guajiro/Wayuunaiki

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## 1. Background information and typological characterisation

Guajiro or Wayuunaiki is an Arawak language spoken by about 400,000 people in the northernmost tip of South America, in Venezuela and Colombia. The Arawak language family is one of the most widespread families in South America, having members as far as Brazil and Peru. Within the family, Guajiro is closely related to near-extinct Paraujano/Añú, and a little less closely related to Lokono (or Arawak proper). Although it is also related to the Arawak languages of the Río Negro basin (Baniva, Piapoko, Yavitero, Warekena, Kurripako, Baré, etc.), the differences in morphological and syntactic structures are striking, some probably due to areally diffused patterns in these languages (cf Aikhenwald 1999). Guajiro has various mutually intelligible dialects.

Guajiro is a polysynthetic language with head-marking morphology. It is agglutinating with little fusion (mostly explainable in terms of transparent phonological processes). It only has 11 prefixes. Of these, 7 are person/number/gender prefixes which can be used with active verbs, nouns and prepositions: *ta-ya'lajüin* 'I bought it', *ta-japü* 'my hand', *ta-maa* 'with me', and also appear in personal pronouns *ta-ya* 'I/me'. These prefixes always cross-reference the object of a preposition in a prepositional phrase: *nü-maa Juan* 'with John', and the possessor in a possessive noun phrase: *nü-tüna Juan* 'John's arm'. There is also 1 person/number/gender prefix *a-* used for unspecified person. There are 2 productive derivational prefixes *ka-* 'ATTRIBUTIVE' and *ma-* 'NEGATIVE' which are mainly used to derive (positive and negative) possessive verbs from nominal themes, and a non-productive, fossilised prefix *pa-* 'DUAL'. There are dozens of suffixes.

The open classes are nouns and verbs. There does not seem to be a class of adjectives. There are around 6 adjective-like words (*laiülaa* 'old', *mulo'u* 'big', etc.) that do not take a verbal suffix when used in the general tense, but which take normal verbal morphology elsewhere. There are no verbless clause complements. Nouns used in the predicative slot behave as stative verbs and take all the appropriate elements of verbal morphology. There is no copula, and the verb *eemaa* 'be, exist' behaves like any other stative verb and has no special functions (it is not an auxiliary) in the language.

Nouns are divided into two neat classes: alienable and inalienable. Inalienable nouns are basically body-parts and kinship terms, as well as some cultural items and most deverbal nouns. They are always possessed and do not need additional morphology to indicate possession other than the indication of the possessor (even in an indefinite form): *tatiina* /ta-tüna/ [1S-arm] 'my arm'. In alienable nouns the possessor is also indicated with the person/number/gender prefixes, but they require an additional lexically-specified possessive suffix *-se* ∞ *-in* ∞ *-ya*, the first being the most productive: *tachajaruutase* /ta-chajaruuta-se/ [1S-machete-POSS] 'my machete'.

Verbs can be divided into two classes: active verbs and stative verbs. The former are always prefixed, the latter are never prefixed. This means that stative verbs cannot participate in constructions where the prefixes are required. All stative verbs are intransitive and can be regarded as unaccusative predicates. Active verbs can be further divided into transitive and intransitive verbs. But active intransitive verbs are easily transitivised through causativisation or

incorporation. The same verbal roots can show up in stative, active intransitives and active transitive verbs. Grammatical relations are marked on the verb by means of one set of 7 person/number/gender prefixes (*ta-* 1S, *pü-* 2S, *nü-* 3SM, *jü-/sü-* 3SF, *wa-* 1P, *jü-/ja-* 2P, and *na-* 3P), or by means of several sets (used according to tense/aspect) of 3 gender/number suffixes (for example: *-shi* M, *-sü* F, *-shü* PL for the general tense).

There are two conjugations: subjective and objective. The subjective conjugation can be used with all types of verbs in both transitive and intransitive clauses. This conjugation only marks the subject, be it A or S, with one of the gender number suffixes in agreement with it: *Atunkeechi Juan*. ‘John will sleep’; *Aya'lajeechi Juan awarianta*. ‘John will buy booze’. The objective conjugation behaves more or less as in Finno-Ugric languages, as it requires that the object be specific. In this latter conjugation, the prefix will refer to A and the suffix will refer to O: *Jüya'lajeechi* [*Mariia*]<sub>A</sub> [*chi kaa'ulakai*]<sub>O</sub>. ‘Mary will buy the (male) goat’. The order of the clause constituents is basically one in which the verb is initial, while the order of the other constituents varies: VS, VAO, VOA. In pragmatically-marked contexts, both S and A, as well as O, can be fronted, with an intonation break.

The verb can exhibit a very particularly complex morphological structure, which may include arguments, tense, valency (passive, causative), modality, and an impressive array of other categories such as desiderative, collaborative, permansive, untimely, counter-expectancy, immediacy, here/there, celerity, excess, additional, augmentative, diminutive, fiction, transient, etc. Due to this complexity, in Guajiro any transitive verb can literally have thousands of forms. Extremely complex forms, although limited by pragmatic reasons, are not rare. Guajiro verbs can also have dozens of infinitives based on themes of increasing complexity.

## 2. A typology of mora augmentation

Morphological mora augmentation is a straightforward case of prosodic morphology. Aronoff & Fudeman (2005:75) provide the following characterisation of this field of linguistic inquiry: “Prosodic morphology deals with the interaction of morphology and prosodic structure. Prosodic structure, in turn, is particularly concerned with the timing units of languages, e.g., the word and syllable, and vowel length.” In linguistic theory the mora has been understood as a unit of phonological weight/timing. This notion allows us, among other things, to model the opposition between heavy syllables (bimoraic) and light syllables (monomoraic), as well as to account for the equivalence among different types of heavy syllables. Although the notion of mora had been used in an informal manner for a long time, only in the eighties it has been used formally as an explicit level of representation.

Within prosodic morphology, one of the most common phenomena is reduplication, that is, the operation of copying a continuous substring from either the beginning or the end of a root. Reduplication may be used for both inflection and derivation. In fact, even within a given language this type of prosodic operation can be used for several purposes. In Nahuatl, for example, reduplication can be used for the plural of nouns, the superlative of adjectives, while in verbs it can express distribution, reiteration, intensification, reciprocal, and other semantic changes (see Peralta 1991 and references therein).

Mora augmentation is also a common type of process in prosodic morphology. It can be achieved through diverse strategies: vocalic augmentation, consonant insertion, consonant

gemination, metathesis, and reduplication. However, mora augmentation can also be simply conditioned by the prosody, with no consequence for the morphology whatsoever. Such is the case of the so-called ‘iamb optimization’ in Cariban languages. In this paper we shall examine cases of mora augmentation as instances of a morphological operation applying to various bases (differently defined according to each case): “The **base** of a morphologically complex word is the element to which a morphological operation applies” (Haspelmath 2002:25).

Davis and Ueda (2001, 2002b) claim that the selection of strategies of mora augmentation can be predicted in a typologically interesting way according to whether it is required by the prosody or by the morphology. If required by the prosody, the preferred strategy is vocalic augmentation, as in Hixkaryana (Derbyshire 1985), and Kari’ña (Álvarez 2000). If required by the morphology, then consonant insertion takes prominence, as in Japanese (Davis and Ueda 2002a), Saanich (Davis and Ueda 2001), and Choctaw (Lombardi and McCarthy 2000).

They recognize that vowel lengthening can sometimes be used morphologically, as in reciprocal stems in Classical Arabic (*katab* ‘write’ versus *kaatab* ‘correspond’). They further contend that by using Optimality Theory as the formal apparatus, the choice of strategy within a language can be explained in terms of a specific ranking of constraints, while the differences across languages can be explained by different rankings. They further claim that when morphological mora augmentation is always realized as vowel lengthening, its representation must be a floating *vocalic* mora, whereas when various realizations are possible, it must be represented as a floating mora *tout court*.

Although somewhat unusual, in the literature it is not difficult to find clear cases of the morphological use of vocalic mora augmentation. In Huallaga Quechua, the first person singular of verbs is formed by lengthening the final stem vowel (Weber 1989:99, 118), as shown in [01].

[01] Quechua 1st person singular of verbs

2ND SINGULAR		1ST SINGULAR	
aywa-nki	‘ <b>you</b> go’	aywa- :	‘ <b>I</b> go’
aywa-pti-ki	‘when <b>you</b> went’	aywa-pti- :	‘when <b>I</b> went’
aywa-shka-nki	‘ <b>you</b> have gone’	aywa-shka- :	‘ <b>I</b> have gone’

In Hausa, the difference in the length of the vowel is used to indicate whether the markers in [02] are in the relative form (Spencer 1991:17).

[02] Hausa relatives

<b>naa</b> kaawoo ‘I have brought’	abìn dà <b>na</b> kaawoo ‘the thing which I have brought’
<b>kaa</b> kaawoo ‘you have brought’	abìn dà <b>ka</b> kaawoo ‘the thing which you have brought’

In Slovak [03], according to Spencer (1998:137), the morphological lengthening of vowels occurs in some paradigms: “The genitive plural of (mainly feminine) nouns in the *-a* class and the (neuter) *-o* class has no suffix, but usually a lengthened final syllable.”

[03] Slovak (restricted) genitive plural (accented vowels= long vowels)

NOMINATIVE SINGULAR	GENITIVE PLURAL	
kadivo	kladív	‘hammer’
stopa	stóp	‘trace’

### 3. Vocalic mora augmentation in Guajiro morphology

In Guajiro, vowel duration is not conditioned by prosody and long vowels can occur in any syllable. The phonemic status of length can be easily established through copious minimal pairs [04].

[04] Guajiro minimal pairs by vowel length

achitaa	/a-chi-ta-a/	‘hit’	achiitaa	/a-chii-ta-a/	‘defecate’
a’wataa	/a-’wa-ta-a/	‘pat’	a’waataa	/a-’waa-ta-a/	‘cry’
kashisü	/ka-shi-sü/	‘she has tail’	kashiisü	/ka-shii-sü/	‘she has father’
kenaa	/kena-a/	‘firefly’	keena	/keena-a/	‘spill’
ayataa	/a-ya-ta-a/	‘stay the same’	ayaataa	/a-yaa-ta-a/	‘travel for goods’

Long vowels can appear intra-morphemically [05a], they may also arise through morphological concatenation [05b], and they may also be the outcome of morphological mora augmentation. This third possibility is the focus of this paper.

[05] Sources of Guajiro long vowels

a.

a’waataa	/a-’waa-ta-a/	‘cry’
ayaataa	/a-yaa-ta-a/	‘travel for goods’
tamaa	/ta-maa/	‘with me’
wayee	/wa-yee/	‘our tongues’
palaa	/palaa/	‘sea’
atpanaa	/atpanaa/	‘rabbit’

b

püülijana	/pü-ülijana/	‘your necklace’
taapüin	/ta-apa-in/	‘I give’
piimata	/pü-imata/	‘your lips’
puusaja	/pü-usa-ja/	‘kiss!’

In what follows, we shall describe eleven cases of vocalic mora augmentation in Guajiro morphology. Most of these are clearly derivational processes, but some of them could be considered instances of inflectional morphology. It is important to stress that morphological mora augmentation can take place more than once within a word domain.

### 3.1. Infinitive Formation

In Guajiro each active verb can have some fifty infinitives which are based on themes of increasing complexity [06]. Stative verbs have a smaller number of infinitives.

[06] A sample of the multiple infinitives of ‘hang’ (active transitive) <sup>1</sup>

akacheja’alaa	‘hang always unexpectedly’	akachennaa	‘be hung’
akachejaa	‘be constantly hanging’	akacheraa	‘hang’
akachejaajiraawaa	‘hang suddenly with others’	akacheraajeevaa	‘wish to hang oneself suddenly’
akachejaanaa	‘be hung suddenly’	akacheraajiraawaa	‘hang oneself with others’
akachejaaweewaa	‘wish to hang suddenly’	akacheraawaa	‘hang oneself’
akachejaawaa	‘hang suddenly’	akachere’ennaa	‘be made hang oneself’
akacheje’ennaa	‘be made hang suddenly’	akachereemataa	‘hang at once’
akacheje’eraa	‘make hang suddenly’	akachere’eraa	‘make hang oneself’
akachejeevaa	‘wish to hang constantly’	akachereewaa	‘wish to hang’
akachejinnaa	‘be made hang constantly’	akacherinnaa	‘be made hang’
akachejiraa	‘make hang constantly’	akacheriraa	‘make hang’
akachejiraawaa	‘hang constantly with others’	akacheriraawaa	‘hang with other’
akachejünaa	‘be hung constantly’	akacheruuwaa	‘be finally hung’

The Guajiro infinitive ends in one of the six long vowels *aa*, *ee*, *ii*, *oo*, *uu*, *üü* or in the sequence *waa*. This duality in infinitive formation is not directly dependent on the morphological complexity of the theme or on the valency of the verb. It is conditioned by phonological structure only, because it has to do with the difference in the weight of the final syllable of the theme acting as the base for the process. If the syllable is light, the final vowel is lengthened [07a]; but if it is heavy (that is, if it has a long vowel, a diphthong, or is checked by a consonant), *-waa* is added, as shown in [07b]. We shall use the label ‘moraiic doubling’ for this operation.

[07] Duality in infinitive formation

#### a. LIGHT THEMES

ka’.wa.yuu. <b>se</b> -] <sub>Theme</sub>	+ INF	→ ka’.wa.yuu. <b>see</b>	‘have spouse’
ka.pü. <b>shi</b> -] <sub>Theme</sub>	+ INF	→ ka.pü. <b>shii</b>	‘have maternal family’
a.sha.ka. <b>ta</b> -] <sub>Theme</sub>	+ INF	→ a.sha.ka. <b>taa</b>	‘descend’

#### b. HEAVY THEMES

ka.ma. <b>nee</b> -] <sub>Theme</sub>	+ INF	→ ka.ma. <b>nee.waa</b>	‘be kind’
ja. <b>püi</b> -] <sub>Theme</sub>	+ INF	→ ja.püi. <b>waa</b>	‘be shy’
ka. <b>chon</b> -] <sub>Theme</sub>	+ INF	→ ka.chon. <b>waa</b>	‘have children’

### 3.2. Indefinite Possession

In Guajiro nouns are distinguished in terms of how they behave in possession. Alienable nouns can appear in an unpossessed form, but when possessed they take a pronominal prefix and a possessive suffix [08a]. Inalienable nouns do not need a possessive suffix as they are intrinsically

possessed. Because they can never appear in an unpossessed form, they will always show one of the following forms in [08b]: (1) with a pronominal prefix, (2) with the prefix for unspecified person and a suffix of indefinite possession, (3) in composition with another noun acting as the possessor, and (4) with the prefix for unspecified person in certain cases of nominal incorporation (see Álvarez 1994, chapter 9). All possessed themes (both inalienable nouns *without* a possessive suffix and alienable nouns *with* a possessive suffix) can act as stems for the formation of denominal verbs with the prefixes *ka-* and *ma-*, which express positive and negative possession respectively [08c].<sup>2</sup>

[08] Alienable and inalienable nouns

WORD	MORPHOLOGY	MORPHEME GLOSS	WORD GLOSS
a.			
limuuna	/limuuna/	[lemmon]	'lemmon'
taliimuunase	/ta-limuuna-se/	[1S-lemmon-POSS]	'my lemmon'
jime	/jime/	[fish]	'fish'
wejimein	/wa-jime-in/	[1P-fish-POSS]	'our fish'
b.			
1. jüpana	/jü-pana/	[3SF-leaf]	'its leaf'
2. apanaa	/a-pana-a/	[0-leaf-IPOSS/	'leaf'
3. aipiapana	/aipia+pana/	[cuji+leaf]	'cuji leaf'
4. apana	/a-pana/	[0-leaf]	'leaf of'
c.			
kalimuunasee	/ka-limuuna-se-e/	[AT-lemmon-POSS-INF]	'to have lemmon'
mapanaa	/ma-pana-a/	[CA-leaf-INF]	'to lack leaves'

Most Arawak languages (Yavitero, Baniva, Warekena, Piapoko, Nomatsiguenga, Caquinte, Ashéninca, etc. ) also exhibit a suffix to mark 'unpossessed' (see Payne 1991, Aikhenvald 1999). In Baniva of Guainía, for example, this suffix is *-sri*, as shown in [09].

[09] Possessed and unpossessed nouns in Baniva of Guainía

POSSESSED		UNPOSSESSED	
nu-nûma	'my mouth'	numâ-sri	'mouth'
nu-têpa	'my buttocks'	tepâ-sri	'buttocks'
nu-tâni	'my son'	tâni-sri	'son'

Guajiro does not have such suffix, but it has developed a rather unusual mechanism which is parallel to infinitive formation, as it is also a case of moraic doubling. The final vowel of the theme is lengthened if the syllable is light [10a], but *-maa* is added if the syllable is heavy [10b]. Additionally, in this stem the root receives a prefix indicating indefinite person. This procedure can be applied even to possessed alienable nouns in order to indicate indefinite possession [10c].

[10] Indefinite possession in inalienable nouns

DEFINITE POSSESSION

a.

nüsi	/nü-si/	‘his tail’
püshi	/pü-shi/	‘your father’
tajapü	/ta-japü/	‘my hand’
tamüla	/ta-müla/	‘my throat’
tasiipü	/ta-siipü/	‘my nephew’
tejepira	/ta-jepira/	‘my finger’
wa’wala	/wa-’wala/	‘our hair’

INDEFINITE POSSESSION (someone’s N)

asii	/a-si-i/	‘tail’
ashii	/a-shi-i/	‘father’
ajapüü	/a-jepira-a/	‘hand’
amülaa	/a-müla-a/	‘throat’
asiipüü	/a-siipü-ü/	‘nephew’
ejepiraa	/a-jepira-a/	‘finger’
a’walaa	/a-’wala-a/	‘hair’

b.

jüsü	/jü-sii/	‘its flower’
tekii	/ta-kii/	‘my head’
wayee	/wa-yee/	‘our tongue’

asiiwaa	/a-sii-waa/	‘flower’
ekiiwaa	/a-kii-waa/	‘head’
ayeevaa	/a-yee-waa/	‘tongue’

c.

takaliinase /ta-kaliina-se/ ‘my hen’

akaliinasee /a-kaliina-se-e/ ‘someone’s hen’  
Compare with *kaliina* ‘hen (unpossessed)’

### 3.3. Verb Gradation

Most Guajiro verb themes, both active and stative, exhibit a *thematic suffix* (*-ta, -ja, -la, -na*) in addition to the root. Guajiro gradation can be defined as the existence of three first-level verbal themes, with partially diverse morphological structures which are systematically related in expressing three different aspects of the predicate (1 SINGLE, 2 MULTIPLE, or 3 SUDDEN) through manipulation (replacement, addition, or *lengthening*) of thematic suffixes (TS), as illustrated in [11] (see also Olza & Jusayú 1978, 1986, Ferrer 1990). Gradation contributes substantially to the multiplicity of infinitives, as seen also above in [06].

[11] Gradation as manipulation of thematic suffixes

G	INFINITIVE	MORPHOLOGY	GLOSS	OPERATION
1	alataa	/a-la- <b>ta</b> -a/	‘pass’	1: Addition of TS <i>-ta</i> +INF
2	alanaa	/a-la- <b>na</b> -a/	‘be passing’	2: Replace with TS <i>-na</i> +INF
3	alanaawaa	/a-la- <b>na-a</b> -waa/	‘pass suddenly’	3: Lengthening of TS <i>-na-a</i> +INF
1	kachetaa	/kache- <b>ta</b> -a/	‘hang (intr)’	1: Addition of TS <i>-ta</i> +INF
2	kachetajaa	/kache- <b>ta-ja</b> -a/	‘be hanging’	2: Addition of TS <i>-ja</i> +INF
3	kachetajaawaa	/kache- <b>ta-ja-a</b> -waa/	‘hang suddenly’	3: Lengthening of TS <i>-ja-a</i> +INF

Of special interest for us here is the case of Gradation 3, as it is systematically derived from Gradation 2 by lengthening the vowel of its last thematic suffix (*-na* in the case of ‘pass’ and *-ja* in the case of ‘hang’). Again, this is a case of moraic doubling, only with a single outcome, as the

thematic suffixes always have the shape CV with a short vowel. The theme thus obtained is available to Infinitive Formation, which will have to resort to adding the suffix *-waa* to the already long theme. In [12] we summarise and illustrate the procedures most frequently used when deriving Gradation 2 from Gradation 1 (examples given in the infinitive, S= Stative, A= Active).

[12] Gradation by replacement (TS1>TS2) or addition (TS1+TS2) of thematic suffixes

G1	EXAMPLE G1	G2	EXAMPLE G2	G3	EXAMPLE G3	GLOSS
Ø <sub>S</sub>	chü'lü-ü	+ -ja	chü'lü-ja-a	Lengthening of final vowel of G2	chü'lü-ja-a-waa	'be wet'
Ø <sub>A</sub>	asa-a	+ -ja	a-sa-ja-a		asa-ja-a-waa	'drink'
-ta <sub>A</sub>	e-me-ta-a	> -na	e-me-na-a		e-me-na-a-waa	'sink'
	a-to'u-ta-a	> -ja	a-to'u-ja-a		a-to'u-ja-a-waa	'lick'
-la	a-na-la-a	> -ja	a-na-ja-a		a-na-ja-a-waa	'stare'
-ta <sub>S</sub>	jakü-ta-a	+ -ja	jakü-ta-ja-a		jakü-ta-ja-a-waa	'be ripe'
-ka	o-ula-ka-a	+ -ja	o-ula-ka-ja-a		o-ula-ka-ja-a-waa	'try'
-ja	e-jime-ja-a	+ -ja	e-jime-ja-a		e-jime-ja-a-waa	'fish'

Except for a number of stative themes (mostly denominal verbs) and around six active themes, verb roots generally cannot appear without a thematic suffix. Gradation 2 differs from Gradation 1 in exhibiting a different thematic suffix altogether, or a thematic suffix additional to the one already present in Gradation 1. When Gradation 2 is obtained through replacement of thematic suffixes, Gradations 1 and 2 have exactly the same number of morphemes. But Gradation 3 is always more complex than both Gradations 1 and 2, as it involves the moraic doubling of the last syllable of Gradation 2, achieved by vowel lengthening. Although the infinitives of G2 and G3 do not constitute minimal pairs in terms of vowel length, the finite forms of these verbs, as well as the deverbal nouns created from them (with *-i* 'agent masculine', *-lii* 'agent feminine', *-le* 'locative'), do constitute such minimal pairs [13] (G3= gloss + 'suddenly').

[13] Some minimal pairs by vowel lengthening in gradation

FINITE G2	FINITE G3	COMMON GLOSS	INFINITIVE G2	INFINITIVE G3
a'lüüjashi	a'lüüjaashi	'he extracts'	a'lüüjaa	a'lüüjaawaa
achujashi	achujaashi	'he sucks'	achujaa	achujaawaa
akaalijashi	akaalijaashi	'he helps'	akaaliijaa	akaaliijaawaa
apünashi	apünaashi	'he leaves'	apünaa	apünaawaa
apoijasü	apoijaasü	'she boils'	apoijaa	apoijaawaa



asünaasü	asüna <b>as</b> ü	‘she takes away’	asünaa	asünaawaa
epinasü	epina <b>as</b> ü	‘she sweeps’	epinaa	epinaawaa
a’aküjalü	a’akü <b>ja</b> alü	‘a female instigator’	a’aküjaa	a’aküjaawaa
achiinalü	achiina <b>al</b> ü	‘a female hitter’	achiinaa	achiinaawaa
achiinai	achiina <b>ai</b>	‘a male hitter’	achiinaa	achiinaawaa
takamüjale	takamü <b>ja</b> ale	‘my place for smoking’	akamüjaa	akamüjaawaa

We have thus minimal pairs in which the length of the vowel creates a change of meaning: *akamüjash* ‘he smokes’ versus *akamüjash* ‘he smokes in a hurry’, *takamüjale* ‘my place for smoking’ versus *akamüjaale* ‘place for smoking in a hurry’, etc.

### 3.4. Dual Verbs

In Guajiro there are eight inflectional (pronominal) prefixes and two derivational prefixes used to create denominal verbs of positive and negative possession *ka-* and *ma-*. There is a third derivational prefix *pa-* which is used with both prepositional and (inalienable) nominal roots in a productively restricted derivational process (with restrictions in the selection of roots) yielding forms with the meaning of ‘sharing N/P’. Although they seem to have a common morphological structure, these stative verbs split in two groups [14] depending on the syllabic weight of the last syllable of the nominal/prepositional root.

[14] Two groups of dual verbs

#### a. ROOTS WITH FINAL LIGHT SYLLABLES

pachiiruwaawaa	‘be one after the other’
painchiwaa	‘be brothers-in-law doubly’
pa’läülaawaa	‘have a common uncle’
papüshiwaa	‘be of the same maternal family’
pashiwaa	‘have the same father’
pashimiaawaa	‘have the same father-in-law (men)’
pawalaawaa	‘be brothers’
pa’ataawaa	‘be side by side’
pa’yulaawaa	‘share the warmth’
pemiiruwaawaa	‘be consecutive sisters’
pemüliaawaa	‘be consecutive brothers’
pepiaawaa	‘share a house’

#### b. ROOTS WITH FINAL HEAVY SYLLABLES

pa’ato’uwaawaa	‘be contiguous’
papüyamüinwaawaa	‘share the same spouse’
pasiicho’uwaawaa	‘be together on horseback’
patchinwaawaa	‘be even in strength’
peechinwaawaa	‘be coupled with male’
peerüinwaawaa	‘share a wife’
peiwaawaa	‘have the same mother’

The common structure for dual verbs of both groups is given and illustrated in [15].

[15] Morphological structure of dual verbs

DUAL PREFIX	+	NOMINAL ROOT	+	DUAL MORAIC DOUBLING	+	RECIPROCAL SUFFIX	+	FINITE / INFINITIVE
/pa-		wa.la		-a		-wa		-shii/
/pa-		pü.ya.müin		-waa		----		-shii/
/pa-		wa.la		-a		-wa		-a/
/pa-		pü.ya.müin		-waa		----	Theme	-waa/

When infinitive formation comes into play, it encounters either a theme-final **wa** or **waa**. In the first case, it lengthens it to **waa**. In the second case, as the stem cannot be further lengthened, it adds a necessary extra **waa**. We have thus two instances of moraic doubling within the domain of a single word. In [16] we illustrate this pattern, and we also include the first person singular so as to let the reader examine the shape of the root (whether the last syllable is monomoraic or bimoraic). In [17] we present an example of the use of these dual verbs.

[16] The roots of dual verbs and moraic doubling

INFINITIVE	MORPHOLOGY	1ST SING	MORPHOLOGY
a.			
pachiiruwaawaa	/pa-chiiruwa-a-wa-a/	tachiiruwa	/ta-chiiruwa/
painchiiwaa	/pa-inchi-i-wa-a/	tainchi	/ta-inchi/
pa'läülaawaa	/pa-'läüla-a-wa-a/	ta'läüla	/ta-'läüla/
papüshiiwaa	/pa-püshi-i-wa-a/	tapüshi	/ta-püshi/
pashiiwaa	/pa-shi-i-wa-a/	tashi	/ta-shi/
pashimiaawaa	/pa-shimia-a-wa-a/	tashimia	/ta-shimia/
pawalaawaa	/pa-wala-a-wa-a/	tawala	/ta-wala/
pa'ataawaa	/pa-'ata-a-wa-a/	ta'ata	/ta-'ata/
pa'yulaawaa	/pa-'yula-a-wa-a/	ta'yula	/ta-'yula/
pemiiruwaawaa	/pa-miiruwa-a-wa-a/	pemiiruwa	/pa-miiruwa/
pemüliaawaa	/pa-mülia-a-wa-a/	temülia	/ta-mülia/
papüyaawaa	/pa-püya-a-wa-a/	tapüya	/ta-püya/
b.			
pa'ato'uwaawaa	/pa-'ato'u-waa-waa/	ta'ato'u	/ta-'ato'u/
papüyamüinwaawaa	/pa-püyamüin-waa-waa/	tapüyamüin	/ta-püyamüin/
pasiicho'uwaawaa	/pa-siicho'u-waa-waa/	tasiicho'u	/ta-siicho'u/
patchinwaawaa	/pa-tchin-waa-waa/	tatchin	/ta-tchin/
peechinwaawaa	/pa-echin-waa-waa/	teechin	/ta-echin/
peerüinwaawaa	/pa-erüin-waa-waa/	teerüin	/ta-erüin/
peiwaawaa	/pa-i-waa-waa/	tei	/ta-i/

[17] Dual verbs in a clause

Pa'ato'uwaashii tepichikana julu'u nayuupala.  
 pa-'ato'u-wa-a-shii tepichi-ka-na jü-lu'u na-yuupala  
 DU-side-REC-DU-PLU child-SP-PLU 3F-in 3P-seat  
 'The children are (sitting) side by side in their seats.'

3.5. Permansive of Stative Verbs

Defective stative verbs with a permansive meaning 'stay, remain' are obtained by lengthening the vowel of the last syllable of *roots* [18a], which in related regular stative verbs are almost always accompanied by the thematic suffix *-ta*. If the last syllable is already long, the sequence *waa* is added, as seen in [18b]. This is again a case of moraic doubling with two possible outcomes. These verbs are defective in the sense that they cannot receive any other suffixes and thus cannot have the forms which are typical of the regular conjugation, as regular statives do. The auxiliary verb *maa* /ma-a/ will be used to form the infinitive of these verbs and also to take all the required inflection (TAM, gender/number, etc.), as seen in [18c] (*-shi* 'M', *-sü* 'F', *-ee* 'FU').

[18] Permansive reduplication with auxiliary verb *maa*

INFINITIVE OF REGULAR STATIVES

INFINITIVE OF PERMANISIVE STATIVES

a.

jimataa	/jima-ta-a/	'be still'	jimaa maa	/jima-a ma-a/	'remain still'
joyotoo	/joyo-to-o/	'be seated'	joyoo maa	/joyo-o ma-a/	'remain seated'
ju'letaa	/ju'le-ta-a/	'be lying'	ju'lee maa	/joyo-o ma-a/	'remain lying'
kulemataa	/kulema-ta-a/	'be smiling'	kulemaa maa	/kulema-a ma-a/	'remain smiling'
lesutaa	/lesu-ta-a/	'be inclined'	lesuu maa	/lesu-u ma-a/	'remain inclined'
sha'wataa	/sha'wa-ta-a/	'be standing'	sha'waa maa	/sha'wa-a ma-a/	'remain standing'

b.

che'ujaawaa	/che'ujaa-waa/	'be missing'	che'ujaawaa maa	/che'ujaa-waa ma-a/	'remain missing'
cheecheewaa	/cheechee-waa/	'be slack'	cheecheewaa maa	/cheechee-waa ma-a/	'remain slack'

c.

FINITE FORMS OF REGULAR STATIVES

FINITE FORMS OF PERMANISIVE STATIVES

Joyot <b>üshi</b> Juan.	'John is sitting'	Joyoo <b>müshi</b> /ma-shi/ Juan.	'John remained sitting'
Joyot <b>üsü</b> Mariia.	'Mary is sitting'	Joyoo <b>müsü</b> /ma-sü/ Mariia.	'Mary remained sitting'
Joyote <b>eechi</b> Juan.	'John will sit'	Joyoo <b>meechi</b> /ma-ee-chi/ Juan.	'John will remain sitting'
Joyote <b>erü</b> María.	'Mary will sit'	Joyoo <b>meerü</b> /ma-ee-lü/Mariia.	'Mary will remain sitting'

3.6. Denominal Stative Verbs

In Olza's (1985) discussion of inalienable nouns in Guajiro, he points out that nouns in general frequently originate verbal forms: "Una de las características que tienen los nombres absolutos como los relativos es la facilidad para convertirse en verbos" (Olza 1985:245). Apart from the denominal

verbs of positive/negative possession illustrated in [08b] above, he brings up an interesting case of denominal verbs which have the general meaning ‘become/act as somebody’s N’. Although Olza does not mention vowel length, it is clear that the operation of moraic doubling of the final syllable of a possessed nominal theme acts as verbalizer, together with the prefix for unspecified person.

The structure of these denominal verbs is illustrated in [19] in the infinitive (where moraic doubling takes place twice within a word), while in [20] the last two denominal verbs are used in sentences.

[19] Denominal stative verbs of ‘becoming’

INFINITIVE	MORPHOLOGY	MORPHEME GLOSS	INFINITIVE GLOSS
ashe’eniwaa	/a-she’eni-i-waa/	[0-dress-VLZR-INF]	‘become sb’s dress’
o’uuwaa	/a-’u-u-waa/	[0-eye-VLZR-INF]	‘become sb’s eye’
apüshiiwaa	/a-püshi-i-waa/	[0-relative-VLZR-INF]	‘become sb’s relative’
epiunaseewaa	/a-piunna-se-e-waa/	[0-slave-POSS-VLZR-INF]	‘become sb’s slave’
ashiiwaa	/a-shi-i-waa/	[0-father-VLZR-INF]	‘become sb’s father’
ekiiwaa	/a-kii-waa-waa/	[0-head-VLZR-INF]	‘become sb’s head’

[20] Examples of use of denominal stative verbs of ‘becoming’ (from Olza 1985:249-251)

a.

Tü wayuu jietkalü matüjainsalü *ashiiwaa.*  
tü wayuu jierü-ka-lü ma-tüjain-salü a-shi-i-waa  
DEM.F person woman-SP-F NEG-know-NEG.F 0-father-VLZR-INF  
‘The woman does not usually become someone’s father.’

b.

*Ashüüsü* nutuma Peetut tü alijunakalü.  
a-shi-i-sü nu-tuma Peetut tü alijuna-ka-lü  
0-father-VLZR-F 3M-by Peter DEM.F Creole-SP-F  
‘The Creole has been taken as a father by Peter.’

c.

*Epiunaseeshi* chi jintüikai.  
a-piunna-se-e-shi chi jintüi-ka-li  
0-slave-POSS-VLZR-M DEM.M boy-SP-M  
‘The boy has become someone’s slave.’

d.

Matüjainsai *epiunaseewaa* chi alijunakai.  
Ma-tüjain-sai a-piunna-se-e-waa chi alijuna-ka-li  
NEG-know-NEG.M 0-slave-POSS-VLZR-INF DEM.M Creole-SP-M  
‘The Creole does not usually become someone’s slave.’

### 3.7. Detransitivization

In a number of cases, a transitive theme can be rendered intransitive by lengthening the final vowel of the thematic suffix. In these cases moraic doubling has just one possible outcome, as the thematic suffixes always have the shape CV with a short vowel. In [21] we illustrate such cases with the second person singular imperative of verbs (using the pronominal prefix *pü-* ‘2S’).

[21] Detransitivization through vowel lengthening

TRANSITIVE			INTRANSITIVE		
püpalaita	/pü-palai-ta/	‘turn (it)!’	püpalaitaa	/pü-palai-ta-a/	‘turn!’
püsi’wata	/pü-si’wa-ta/	‘untie (it)!’	püsi’wataa	/pü-si’wa-ta-a/	‘untie yourself!’
püpalasira	/pü-palasi-la/	‘lay (it)!’	püpalasiraa	/pü-palasi-la-a/	‘lie down!’
püpüchirala	/pü-püchira-la/	‘straighten (it)!’	püpüchiralaa	/pü-püchira-la-a/	‘be straight!’
pujutala	/pü-juta-la/	‘open (it)!’	pujutalaa	/pü-juta-la-a/	‘open yourself!’
punujula	/pu-nuju-la/	‘hide (it)!’	punujulaa	/pu-nuju-la-a/	‘hide yourself!’
pükaüsira	/pü-kaüsi-la/	‘fatten (it)!’	pükaüsiraa	/pü-kaüsi-la-a/	‘get fat!’

### 3.8. Progressive

In some cases, moraic doubling causing the lengthening of the final vowel of the stem (which is, generally, the vowel of the thematic suffix) is used to distinguish a progressive meaning from a nonprogressive one, as illustrated in [22].

[22] Progressive marked by vowel lengthening

NONPROGRESSIVE			PROGRESSIVE		
tekapa	/ta-ka-pa/	‘when I eat’	tekaapa	/ta-ka-a-pa/	‘when I’m eating’
toikapa	/ta-ika-pa/	‘when I sell’	toikaapa	/ta-ika-a-pa/	‘when I’m selling’
tasapa	/ta-sa-pa/	‘when I drink’	tasaapa	/ta-sa-a-pa/	‘when I’m drinking’

### 3.9. Idiosyncratic Changes

With certain stems, moraic doubling causing vowel lengthening creates semantically-related forms with meanings not entirely predictable in a unified pattern [23].

[23] Idiosyncratic changes by vowel lengthening

SHORT THEME			LONG THEME		
pa’aja	/pü-’a-ja/	‘burn!’	pa’ajaa	/pü-’a-ja-a/	‘bake (vegetables)!’
pimi’ija	/pü-mi’i-ja/	‘celebrate!’	pimi’ijaa	/pü-mi’i-ja-a/	‘play!’
püsika	/pü-sika/	‘screw (her)!’	püsikaa	/pü-sika-a/	‘have intercourse!’
püpüta	/pü-pü-ta/	‘leave (it) behind!’	püpütaa	/pü-pü-ta-a/	‘say good-bye!’
putunka	/pü-tunka/	‘sleep!’	putunkaa	/pu-tunka-a/	‘sleep out!’

### 3.10. Vocative

Vocatives also manifest a complementary way of formation according to the shape of the final syllable of the stem. If there is a light syllable, the final vowel is lengthened. But if the last syllable of the stem is heavy, *-maa* will be used. Examples of this complementary formation of vocatives due to moraic lengthening are given in [24].

[24] Vocative forms in sentences

a.

Toiküin paawakat, *tavalaa*.  
ta-ika-ni paawa-ka-lü ta-wala-a  
1S-sell-CS turkey-SP-F 1S-brother-VOC  
'I sold the turkey, my brother.'

b.

*Tachonwaa*, pü'lakata si'waraikalü sümaa wüin.  
ta-chon-waa pü-'laka-ta si'warai-ka-lü sü-maa wüin  
1S-son-VOC 2P-prepare-TS boiler-SP-F 3F-with water  
'My son, prepare the boiler with water!'

### 3.11. Superlative

Jusayú (2002:17) gives us “ejemplos del alargamiento debido al superlativo”, where the final vowel of a (pro)noun is lengthened in a construction involving a nominalized form of the verb with the definite article (M: *-kai*, F: *-kali*, PL: *-kana*) plus *-ya* [25]. Clearly we have really two outcomes in this case of moraic doubling, as the addition of *-maa* to the final heavy syllable in *atpanaa* ‘rabbit’ shows, versus the plain vowel lengthening in the rest of the cases.

[25] Superlative lengthening in (pro)nouns

Kaüsikaiya alijunaa.	'He is a very fat Creole.'
Kawachirakaiya püliikuu.	'It is a very fast donkey.'
Mojulaakalüya jiaa.	'She is very wicked.'
Shokulakanaya tepichii.	'How very lazy these boys are!'
Kawachirakaiya atpanaawaa.	'It is a very fast rabbit.'

## Conclusion

In Guajiro mora augmentation is required by the morphology, not by the prosody. It constitutes a multi-purpose morphological operation which examines the weight of the final syllable of the base and adds one or two moras according to that weight. This prosodic operation can be employed for several purposes. In Guajiro the operation of moraic doubling acts on various bases and is used for infinitive formation, indefinite possession, verb gradation, formation of dual verbs, formation of denominal stative verbs, detransitivization,

progressive, idiosyncratic changes with verbs, vocative, and superlative. There can be more than one instance of moraic doubling in a word, as this operation can take place on a base already formed by moraic doubling.

Davis and Ueda claim that the preferred strategy of morphological mora augmentation should be consonant insertion. However, Guajiro massively implements it as vowel lengthening. Although morphological mora augmentation is almost always realized as vowel lengthening in Guajiro, its representation cannot simply be a *floating vocalic mora*, as Davies and Ueda suggest, because such vowel lengthening is just one of the two possible outcomes of the reduplication-like process of moraic doubling. But because morphological mora augmentation has various (namely, two) realizations in Guajiro, it cannot be represented as a floating mora *tout court*. The other option that Davies and Ueda propose. The outcome of such process can be either the addition of *one* mora through the lengthening of the final vowel or the addition of *two* moras by adding the default suffix *-waa*. Thus, Guajiro seems to constitute a unique case among languages making use of vocalic mora augmentation in the morphology.

## Notes

1. The practical orthography used for Guajiro conveys phonetic values mostly similar to those of Latin American Spanish, except when indicated: VOWELS: **a, e, i, o, u, ü** (high central vowel); CONSONANTS: **p, t, k, ' = glottal stop, j = glottal fricative, s, sh = alveopalatal fricative, ch = palatal affricate, m, n, l = lateral flap, r = trill, w, y = palatal glide**. Double vowels represent long vowels, while double consonants are hetero-syllabic. Sequences **ai, au, aü, ei, eu, oi, ou** are diphthongs, while sequences **ia, ua, üa, ie, ue, io, uo** are hetero-syllabic. Stress is fully predictable. The stressed syllable is the second syllable if the first syllable is light: *a.pá.la.si.raa* 'to lay down', *ka.shá.ja.laa* 'to have writings'. If the first syllable is heavy (that is, it has a long vowel, a diphthong, or is checked), then this very initial syllable receives stress: *áa.sba.ja.waa* 'to speak', *éi.sa.la.waa* 'to lie down', *ón.ju.laa.sü* 'she hid herself'. If at the beginning of a word the syllable has a short vowel followed by a glottal stop, such syllable is extra-metrical: *(sha').wa.táa* 'to be standing', *(a').la.ká.jaa.sü* 'she cooks'.

2. In the interlinear glosses the following abbreviations have been used: 0: zero person/indefinite, 1P: 1 plural, 1S: 1 singular, 2P: 2 plural, 2S: 2 singular, 3F: 3 singular feminine, 3M: 3 singular masculine, 3P: 3 plural, AT: attributive, AUX: auxiliary, DEM.F: demonstrative feminine, DEM.M: demonstrative masculine, DEM.P: demonstrative plural, DU: dual, F: feminine, FU: future, INF: infinitive, IPOSS: indefinite possession, M: masculine, NEG: negative derivative, NEG.F: negative feminine, NEG.M: negative masculine, PL: plural, POSS: possessive, SP: specifier, VLZR: verbalizer, VOC: vocative.

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