Prevocalic Tenseness in English, Binarity and the Typology of Long Vowel Distributions

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Aims

- ☒ - A better understanding of binarity, long vowels, diphthongs and hiatuses in the framework of Strict CV
- ☒ - An explanation for Prevocalic tenseness in SSB.
- ☒ - A working typology of positional restrictions on long vowel distributions
- ☒ - A novel mechanism for formalising typological variation and implicational relationships: (Phonological) Parameter Hierarchies (Ulfsbjorninn 2014, 2017; Benz & Ulfsbjorninn 2018) (cf. Vaxman 2018)
- ☒ - A Strict CV interpretation of quantity: Incorporation (Ulfsbjorninn 2014; Faust & Ulfsbjorninn to appear).
- ☒ - An analysis where English vowel length (not tenseness) is contingent on phonological quantity...
- ☒ - Resolution to a long standing paradox created by moraic theory: if English allows trimoraic syllables CVVC (eg. shoulder), why doesn't it allow CVVV?

1 Background#1 - VV in English (in current SSB)

1.1 Hiatus: Prevocalic Tenseness

(1) An exceptionless static distribution: in English the first member of a hiatus, if stressed, is always tense: *Leo, ruin, crayon, hiatus, voyage, Noam, flower*

(2) In current SSB, PT also applies to unstressed vowels, e.g., *react, tuition*
"Pretonic V Tenseness" (KIT -> FLEECE, FOOT -> GOOSE).
Independently, no prevocalic schwa: *mə.áu.

-> only tense vowels precede schwa

1.2 Monophthongisation in current SSB: diphthongs and hiatuses (cf. Szigetvári & Lindsey's CUBE)

(3) SQUARE /ɛə/ or /eə/ -> [ɛː] e.g., *stairs, parent, Hungarian*

(4) NEAR /ɪə/ -> [ɪː][1] e.g., *Lear/leer, hero, sincere*

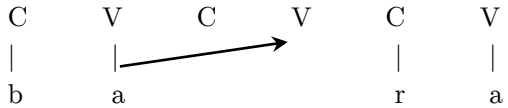
(5) CURE /ʊə/ -> [oː] e.g., *poor, sure, tourist* (CURE-THOUGHT Merger)

(6) (a) [lɪə] → [lɪː] 'Lear/leer' vs. [liːə] 'Leah'
(b) [ʃʊə] → [ʃoː] 'sure' vs. [suːə] 'sewer'

2 Background#2 - Phonological parameter hierarchies and Long vowel typology (cf. Ulfsbjorninn 2014, 2017; Benz & Ulfsbjorninn 2018)

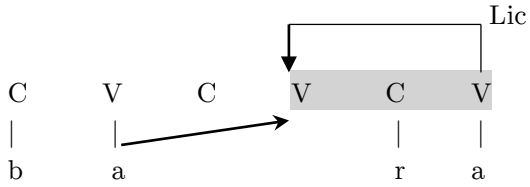
2.1 What restricts vowel length (positionally speaking)?

(7) If a language allows Vː s then it universally allows Vː s preceding a filled V (e.g. [baːra])

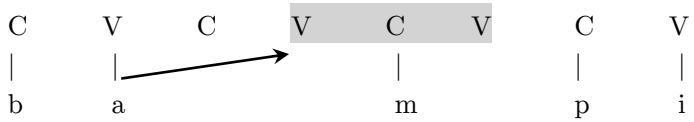


[1] [ijə] when heavily accentuated.

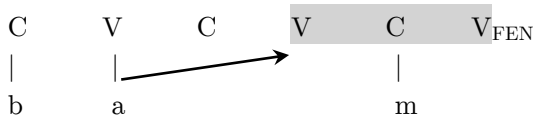
(8) The site of a long vowel's spreading is licensed by the following V



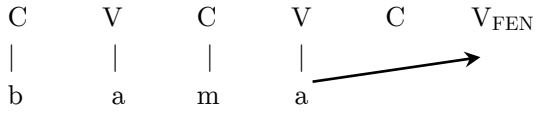
(9) (a) Medial Empty Nucleus (MEN) [b**a:**mØpi]



(b) Final Empty Nucleus (FEN) [b**a:**mØ]



(c) FEN is part of the V: [bam**a:**]



2.2 Long vowel typology and the Parameter Hierarchy

(10) Positional restrictions on long vowels (^{o} indicates a caveat)

Env / Lang	V:C.CV/# b**a:**mpi/Ø	V:C# b**a:**m	V:# bam**a:**
Licensor type	MEN	FEN	FENinV:
Type 1			
Chugach	*	*	*
Type 2			
Turkish	*	*	✓[2]
Hausa	*	*	✓
Type 3			
Icelandic	*[3]	✓	✓
Type 4			
Cairene Arabic	*	✓	*
Type 5			
Palestinian Arabic	✓[4]	✓	*
Type 6			
Hungarian, Pulaar[5]	✓	✓	✓

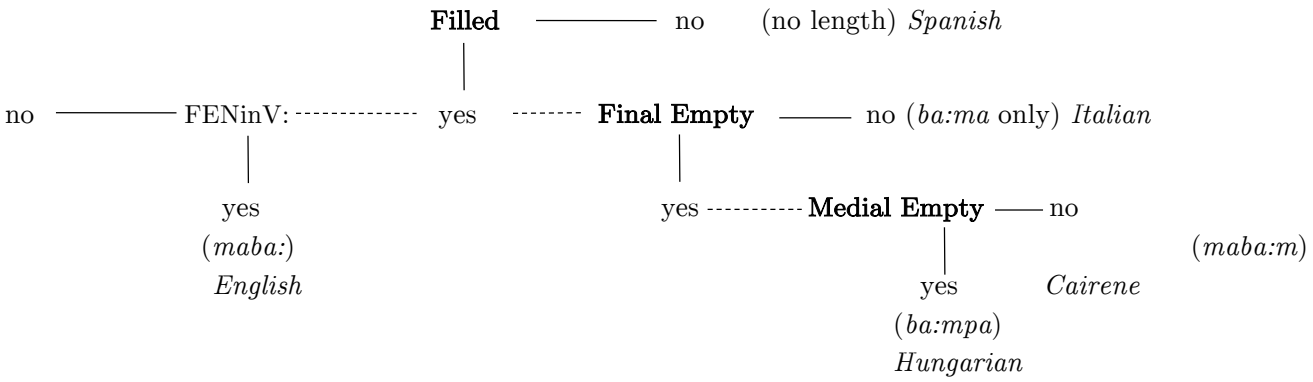
[2] Only in monosyllables

[3] However, the language does allow mysterious light rising diphthongs (Árnason 2011).

[4] These are only permitted in derived words, however.

[5] The length is extremely restricted, however, because we are only looking at positional not melodic environments, the presence of even one long vowel in this syllable structure configuration would be enough to set the parameter to <yes>.

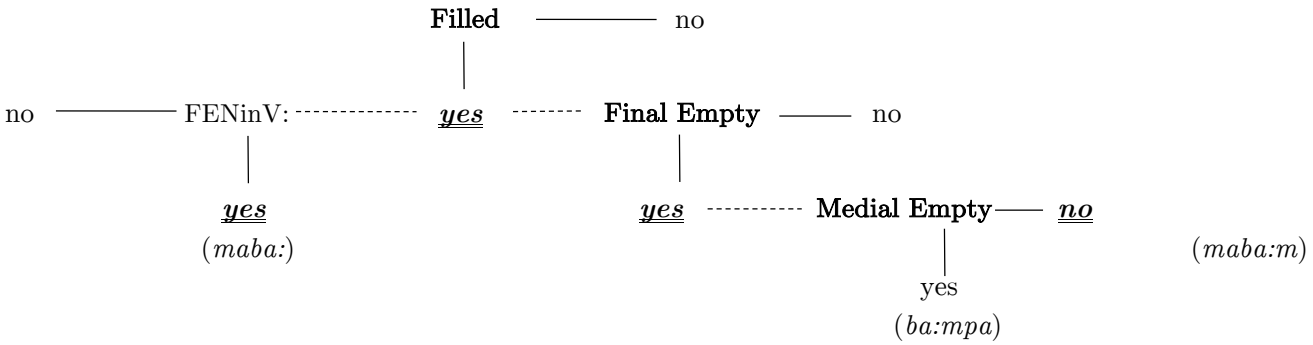
(11) Parameter hierarchy for long vowels



Above we see that **Empty** implies **Filled** and **Medial** implies **Final.**[6]

2.3 English long vowel settings and consequences for spreading

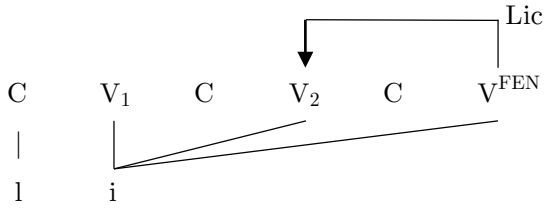
(12) Parameter hierarchy for long vowels (English settings shown in ***underline***)



Given the parameter settings for English, a vowel may spread to any V position that is:

(13) (a) licensed by a filled vowel,
(b) in absolute word-final position, or
(c) before FEN but not before a MEN.

(14) Ternary monophthong



(15) Spreading is binary *(to be rejected)*

[6] Interestingly, the implicational statement "Empty implies Filled" opens the door for third factor explanations. First, Emptiness is more marked than Filledness considering that phonology is a module devoted to externalisation (Chomsky, Hauser & Fitch 2002; Chomsky 2005) and therefore phonological objects that will receive no phonetic interpretation need extra licensing and extra stipulations in the grammar (not less). Cyran (2003) discusses complexity scales and markedness in closely related way. However, **Medial** implies **Final** doesn't seem to follow so easily from general principles. Which begs the question: how did it become this way? Crucially these questions can only be asked with such clarity due to the formalism employed in the analysis of the typology (specifically Strict CV principles). In an instance of McCarthy's famous edict: "if the representations are right, the rules will follow" (1988:84).

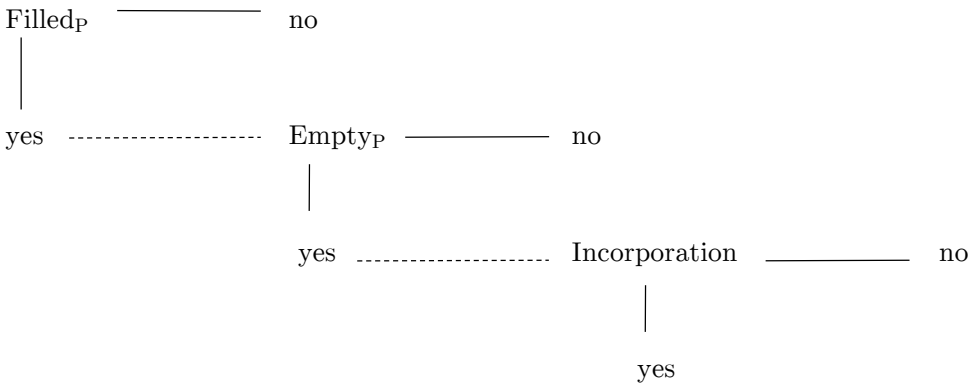
3 Why is long vowel spreading binary? Quantity

3.1 Quantity and stress in Strict CV

(16) kamísa ‘shirt’ / papél ‘paper’ showing fixed stress

```
                    *
                    |
                    *           *
                    |           |
C   V   C   V   C   V
|   |   |   |   |   |
k   a   m   i   s   a
p   a   p   e   l
```

(17) Projection parameters and incorporation (based on Ulfsbjorninn 2014)



Setting Empty$_P$ to <yes> has the following metrical effect on representations:

(18) CVC.CVC.CV with EmptyP <no>[7]

```
2       *       *       *
1       *       *       *
0   C   V   C   V   C   V   C   V   C   V
    |   |   |       |   |   |       |   |
    a   b   c       d   e   f       g   h
```

(19) CVC.CVC.CV with EmptyP <yes>

```
2       *       *       *
1       *   *   *       *   *
0   C   V   C   V   C   V   C   V   C   V
    |   |   |       |   |   |       |   |
    a   b   c       d   e   f       g   h
```

[7] Filled nuclei project universally project to Line 2. Empty nuclei project to Line 1 (Ulfsbjorninn 2014; Faust & Ulfsbjorninn to appear), for reasons that do not immediately concern the discussion here.

(20) CVC.CVC.CV with Incorporation <yes> (b and e are equally 'heavy')

Incorporation <yes> (* = grid mark)

(a) Filled V_1 = ** (b) Filled V_1 prec Empty V_2 = ***)

3		*)$_\alpha$				*)$_\beta$			
2		*				*			*
1		*		*)$_\alpha$		*		*)$_\beta$	*
0	C	V	C	V	C	V	C	V	C	V
	|	|	|		|	|	|		|	|
	a	b	c		d	e	f		g	h

3.2 Quantity in English

(21) Incorporation (binary)

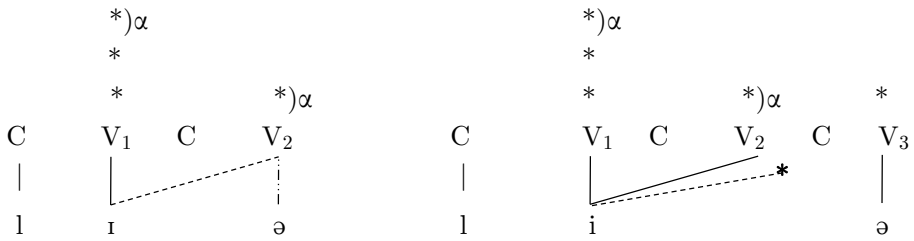
Project a V to L3 if prec (it precedes) an empty V
Incorporation is strictly local

CVVC and incorporation [ʃouldə] 'shoulder'

3		*)$_\alpha$						
2		*					*	
1		*		*)$_\alpha$		*	*	
0	C	V	C	V	C	V	C	V
	|	|		|	|		|	|
	ʃ	o		u	l		d	ə

3.3 Binary quantity = binary spreading and hiatus sequences

(22) [lɪː] 'Lear/leer' [liːə] 'Leah'



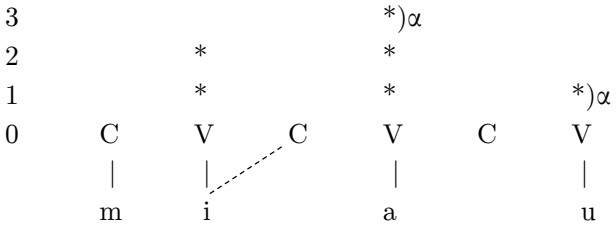
4 Pretonic Prevocalic Tenseness

(23) Pretonic Prevocalic Tenseness

a. *mɪ.áu
b. *mɛ.áu
c. *mə.áu

cf. [mi̯.jǽw] 'meow'
[tu̯.wíʃən] 'tuition'

(24) Pretonic tenseness [mɨj.ǽw] ‘meow’



5 Conclusions

We saw a typology of long vowels expressed with the parameter hierarchy and where English sits within it. According to the conditions on long vowel spreading, there is no reason to exclude CVVV sequences.

Prevocalic tenseness is nearing completion as a process in SSB.

It comes from monophthongisation of lax vowels into schwa as long as they are part of a diphthong and not a hiatus. This eliminated lax vowels before schwa, while forbidding the creation of CVVV sequences.

Vowel length in English is inextricably tied to quantity and quantity in English is **binary**. That’s why although there are CVVC syllables, there are no CVVVs.

Pretonic Prevocalic Tenseness comes as a product of gliding into a stressed syllable.

6 Results

Some pretonic vowels are remnants from hiatuses (eg. Leah), and others are created by gliding (t**u**ítion). Lax vowels before schwas were smoothed into long lax vowels, eliminating them form this context.

(25)

		Process
Pretonic lax (eg. t**u**ition, cr**e**ate)	>	Tensing
Pre-schwa lax (eg. b**e**ar, b**ee**r, s**u**re)	>	Deletion of schwa
Pre-schwa tense (eg. leah)		
Distribution	Lax and Tense before vowels	No lax before vowels

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