A Crash Course in Syllable Structure

Jochen Trommer
jtrommer@uni-leipzig.de

University of Leipzig
Department of Linguistics

Concatenative Approaches to
Nonconcatenative Morphology
EGG 2008

Evidence for Syllables

- Phonotactic restrictions on syllables
- Processes, which refer to syllables

Samoan

tu:	“stand”
tatala	“open”
ananafi	“yesterday”
la:poʔa	“be tall”

Samoan: Phonotactic Restrictions

- Words start with at most 1 consonant
- Words always end in vowels
- Between 2 vowels there is maximally 1 consonant

Samoan with Syllables

tu:	“stund”
ta.ta.la	“open”
a.na.na.fi	“yesterday”
la:.po.ʔa	“be tall”

Phonotactic Restrictions Using Syllables

Syllables have the form (C)V

t-Glottalization in English

(a)	eat	[iːtˀ]	**at the end of a word**
	rabbit	[ɹæbɪtˀ]	
	light	[laɪtˀ]	
(b)	attract	[ətʰɹækt]	**before *r***
	waitress	[weɪtʰɹəs]	
(c)	atlas	[ætˀləs]	**before other Cs**
	butler	[bɐtˀl̩ ɹ̩]	
	utmost	[ɐtˀmoʊst]	

t-Glottalization

without syllables

/t/ ➔ [t^{ʔ}] / [-cons] ____ { # / C_r }

t-Glottalization and Syllable Boundaries

(a)	eat	[iːtˀ]	**at the end of a syllable**
	rabbit	[ɹæbɪtˀ]	
	light	[laɪtˀ]	
(b)	attract	[ə.tʰɹækt]	**at the beginning of a syllable**
	waitress	[weɪ.tʰɹəs]	
(c)	atlas	[ætˀ.ləs]	**at the end of a syllable**
	butler	[bɐtˀ.lɻ̩]	
	utmost	[ɐtˀ.moʊst]	

t-Glottalization

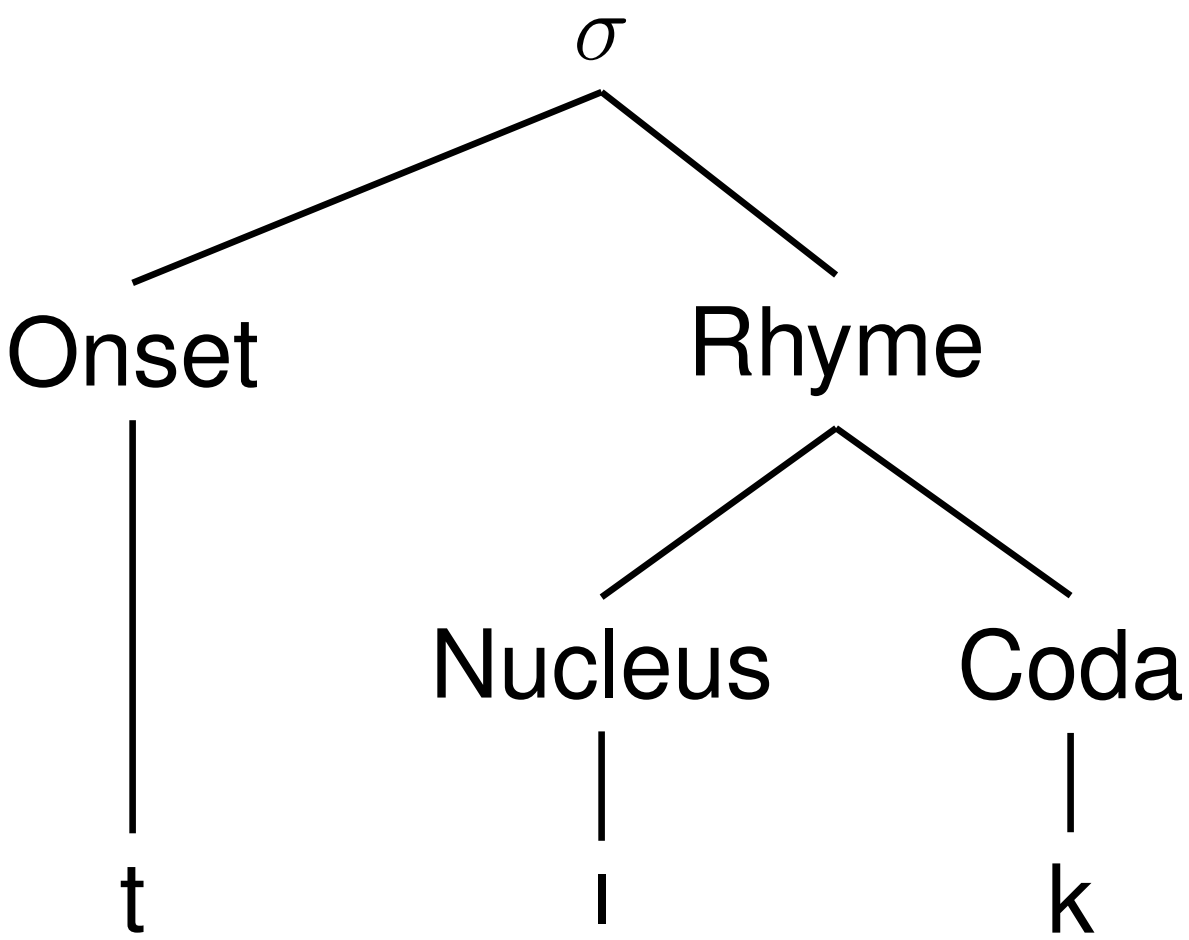
with syllables

/t/ ➔ [t͡ʔ] / [-cons] ___]$_\sigma$

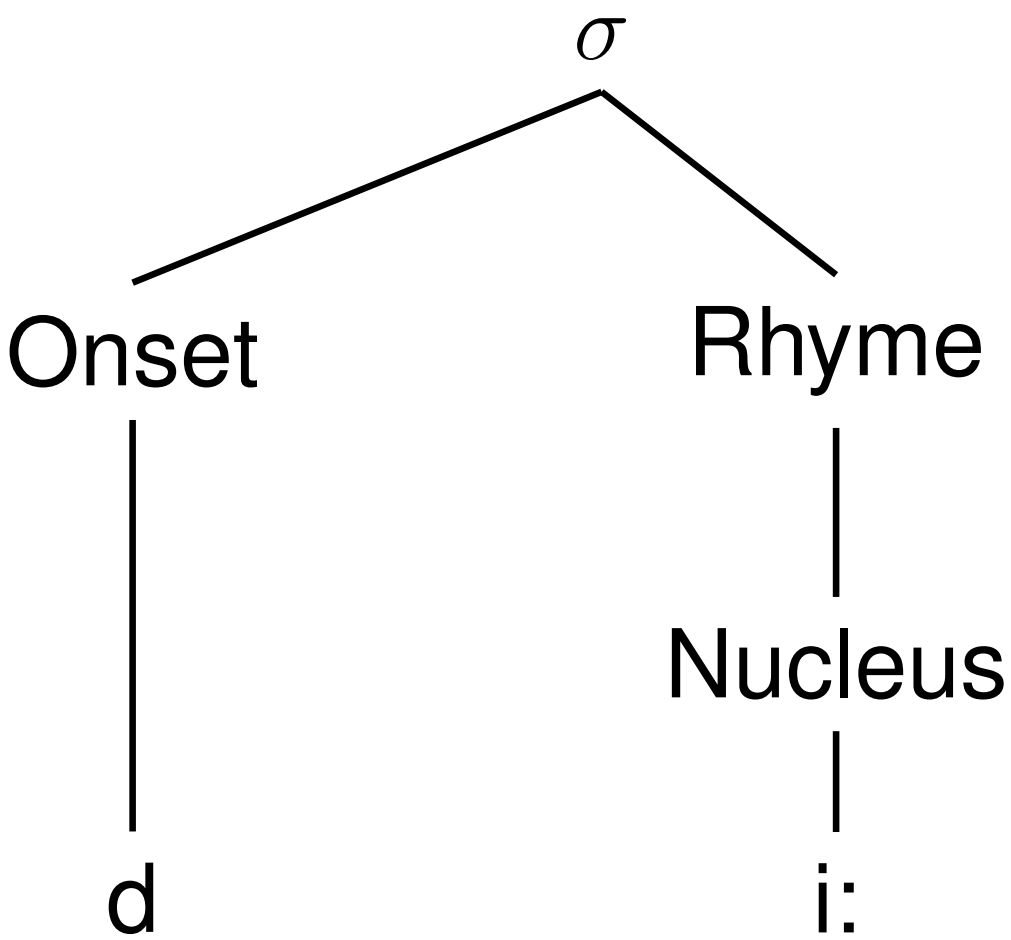
Common Assumptions

- Syllables are predictable
- Syllables are not specified in the Lexikon
- Syllable structure is language-dependent

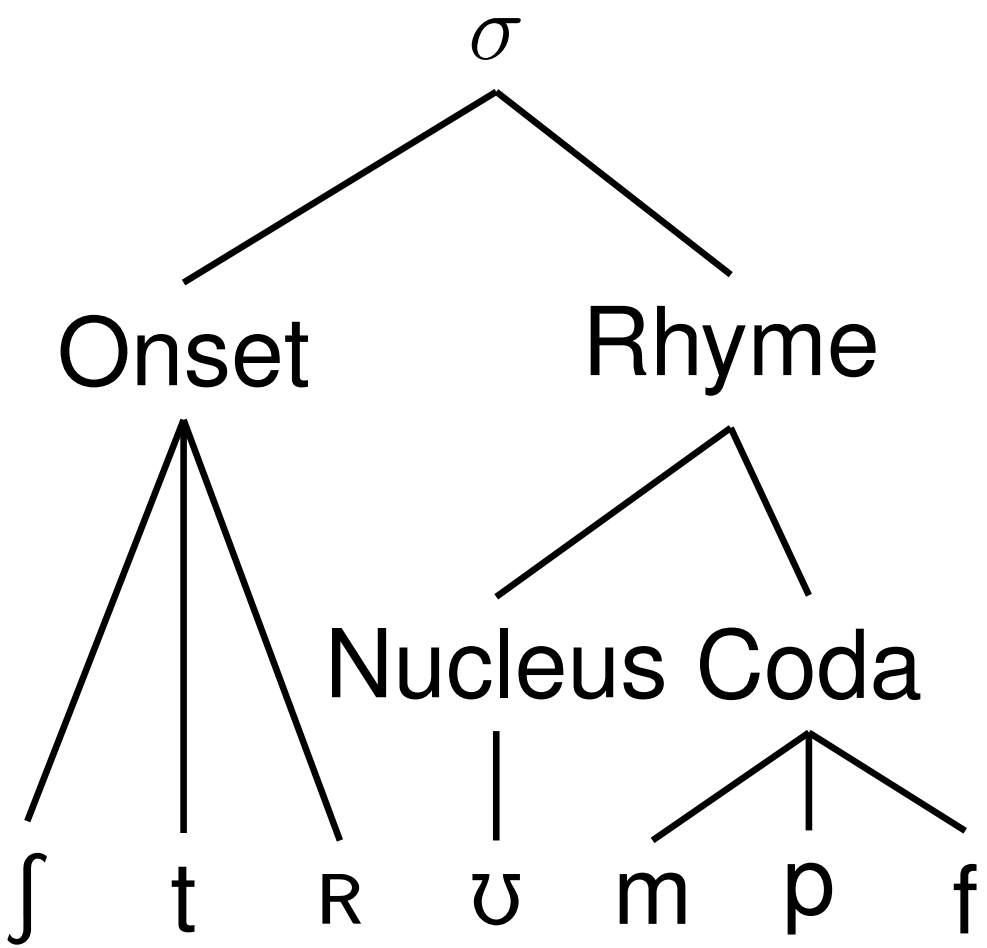
The Constituent Model of the Syllable



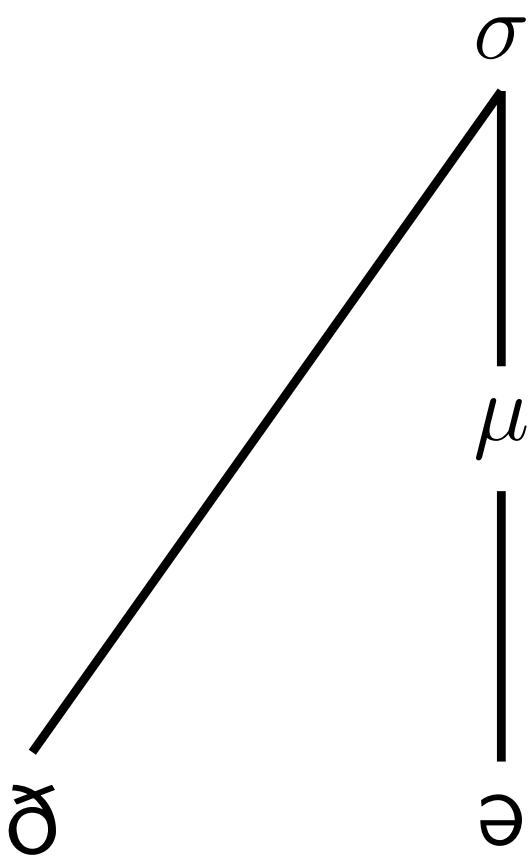
Long Vowels in the Constituent Model



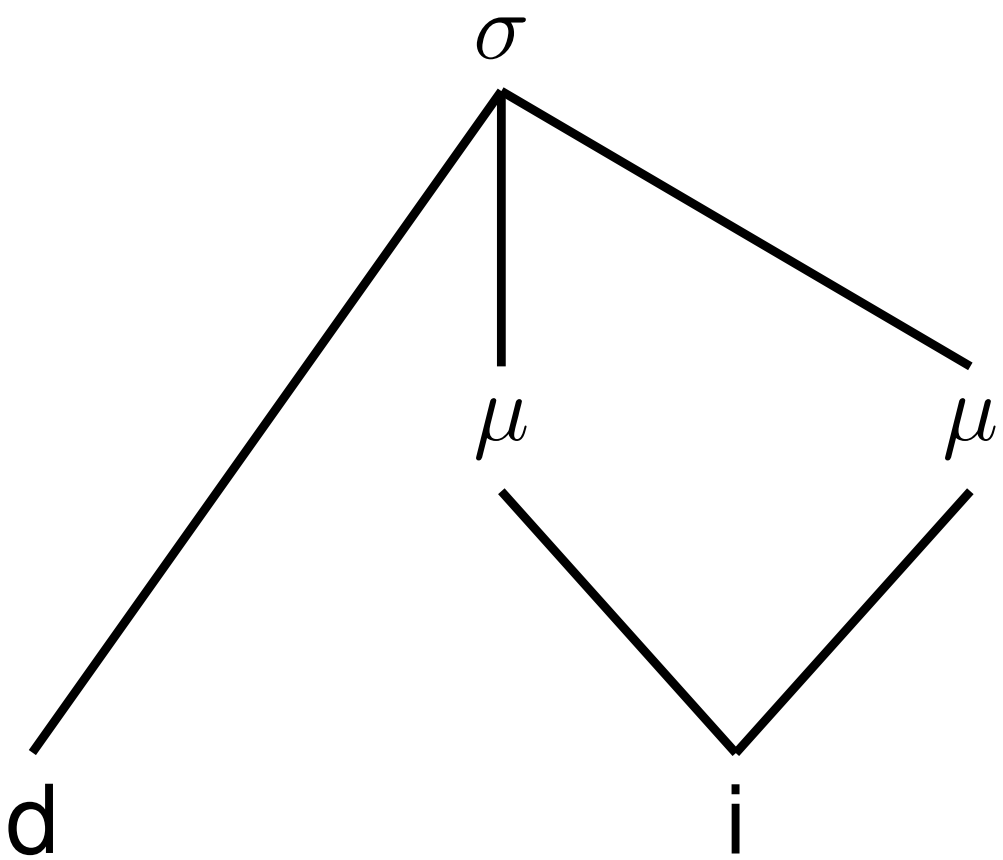
The Constituent Model of the Syllable



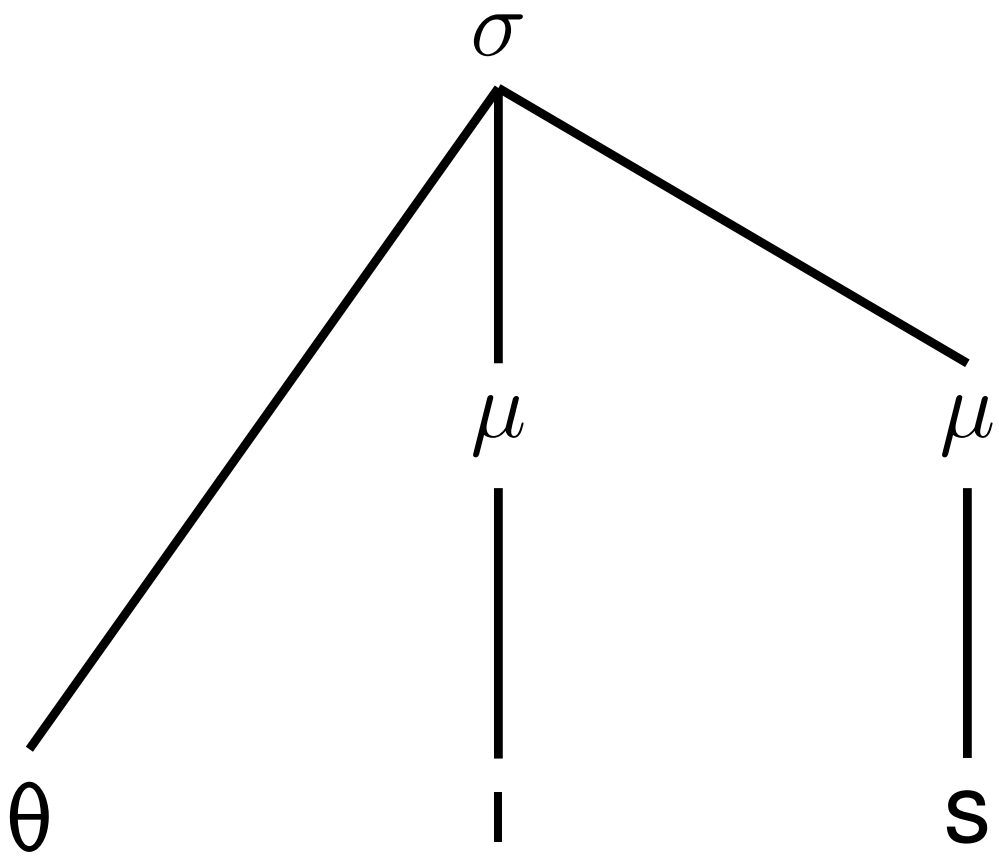
Light Syllable in the Mora Model



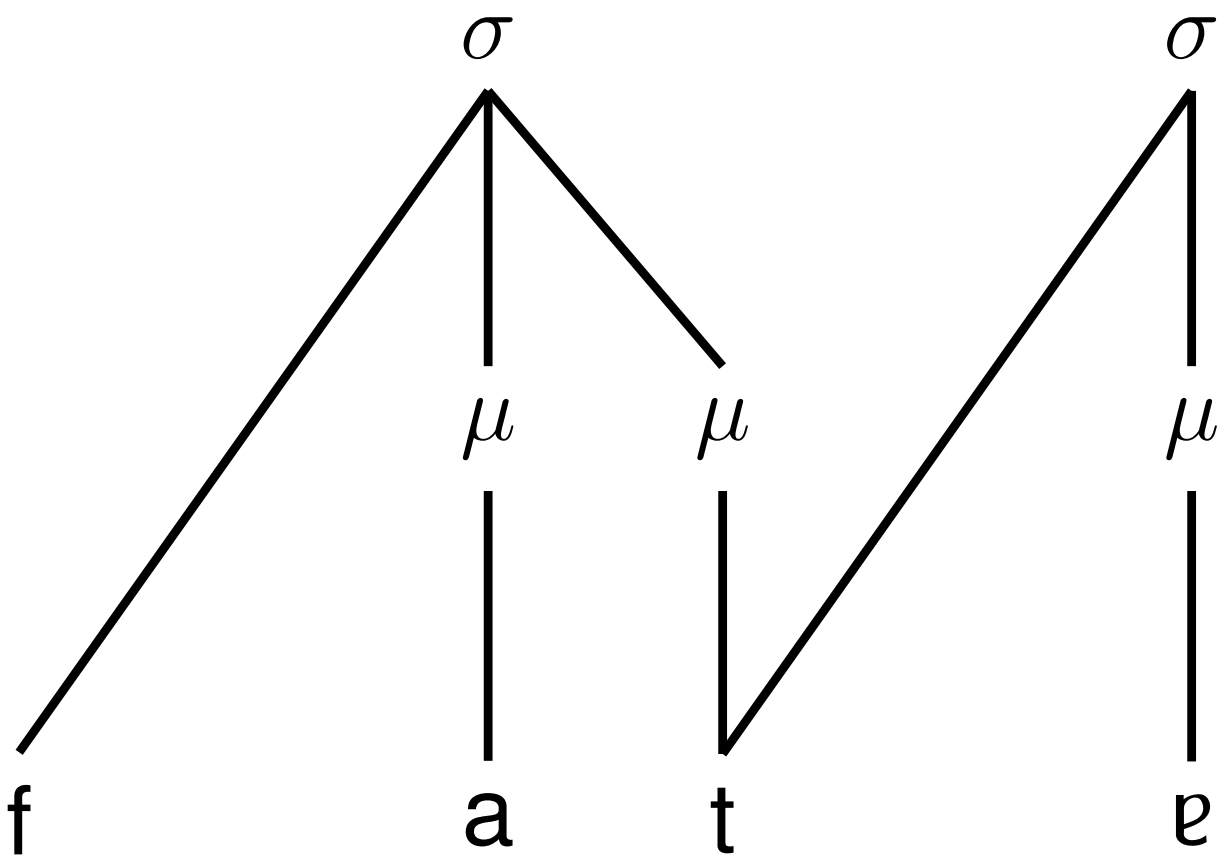
Heavy Syllable with Long Vowel in the Mora Model



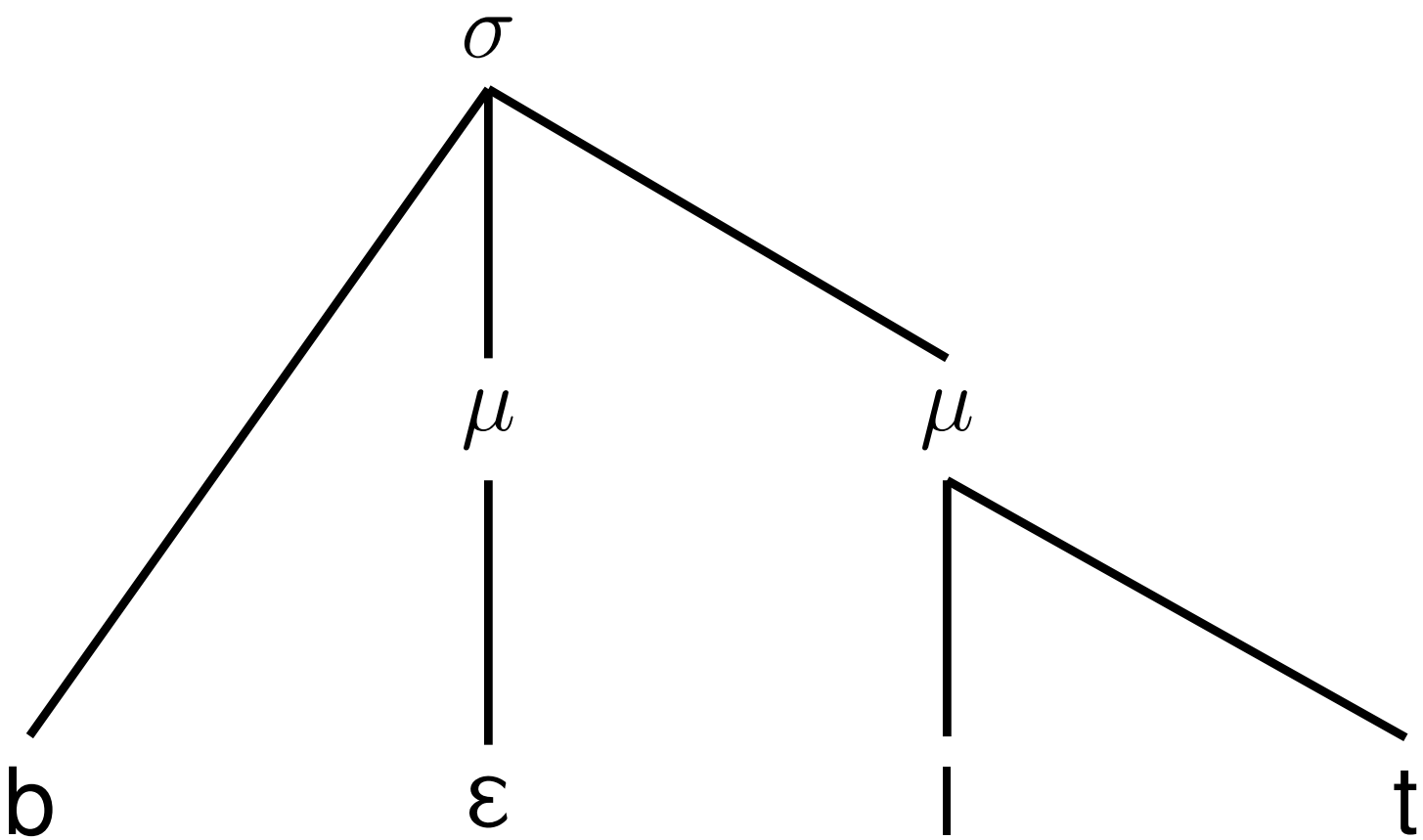
Heavy Closed Syllable in the Mora Model



Geminates in the Mora Model



Superheavy Syllable in the Mora Model



Constituent Model vs. Mora Model

Common Features:

- Special status of the rhyme
- Separate nodes for rhyme segments

Specific Properties of the Mora Modell:

- Onset is structurally invisible
- Nucleus and coda are structurally identical
- Treatment of long vowels

Evidence for the Mora Model

- Weight Sensitivity in word stress
- Compensatory lengthening

Syllable Weight in Word Stress: Latin

heavy syllable	**light syllable**
CVC, CV:	CV

a. [i.ni.**mi:**.kus] “enemy”
[re:k.**sis**.tis] “you (pl.) governed”

b. [**i:n**.su.la] “island”
[**fa**.bu.la] “small bean”

Syllable Weight in Word Stress: Latin

a.	[i.ni.**mi:**.kus]	“enemy”
	[re:k.**sis**.tis]	“you (pl.) governed”
b.	[**i:n**.su.la]	“island”
	[**fa**.bu.la]	“small bean”

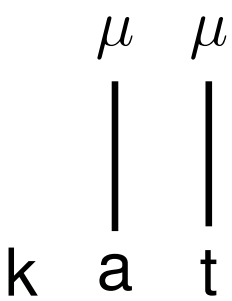
In a word with at least 3 syllables
the penultimate syllable is stressed if it is heavy

If the penultimate syllable is light,
the antepenultimate syllable is stressed

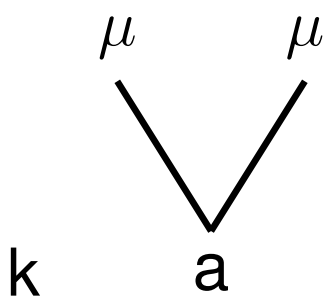
Syllable Weight in the Mora Model

heavy syllables

CVC



CV:



light syllables

CV

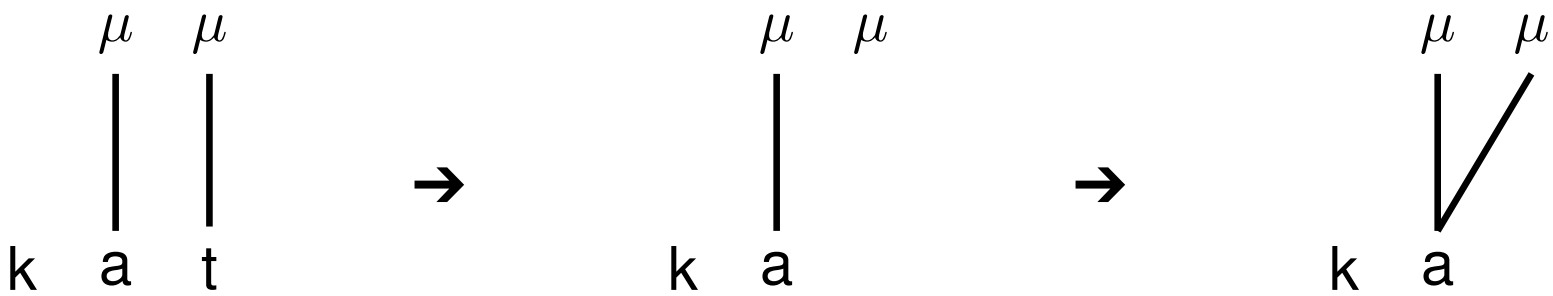
heavy syllable = polymoraic syllable

Compensatory Lengthening

Indogermanic		**Latin**	
ni**s**dos	⇒	n**i:**dus	“nest”
ka**s**nos	⇒	k**a:**nus	“grey”
slu:brikos	⇒	lu:brikus	“slippery”
snurus	⇒	nurus	“schwiegertochter”

deletion of coda consonants
is compensated by vowel lengthening

Compensatory Lengthening in the Mora Modell



Correct Prediction: Only coda consonants induce lengthening