English footing and flapping

Fresno State Linguistics Department Colloquium

Darin Flynn
School of Languages, Linguistics, Literatures and Cultures
Faculty of Arts, University of Calgary

January 25th, 2024

Background issue: to recur or not to recur

UNIVERSITY OF CALGARY

"prosodic constituents of a same category are not nested" (Selkirk 1986:384; see also Nespor & Vogel 1986, 2007; Vogel 2009)

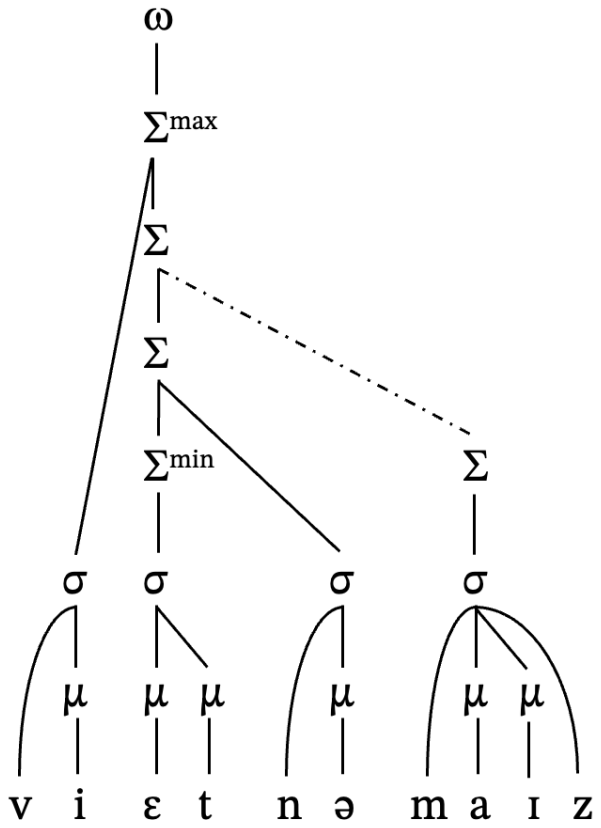
"Recursion consists of embedding a constituent in a constituent of the same type, for example a relative clause inside a relative clause... This does not exist in phonological structure." (Pinker & Jackendoff 2005:211)

"The rules that construct the phonological hierarchy are not recursive in nature, while the rules that construct the syntactic hierarchy are." (Nespor & Vogel 2007:2)

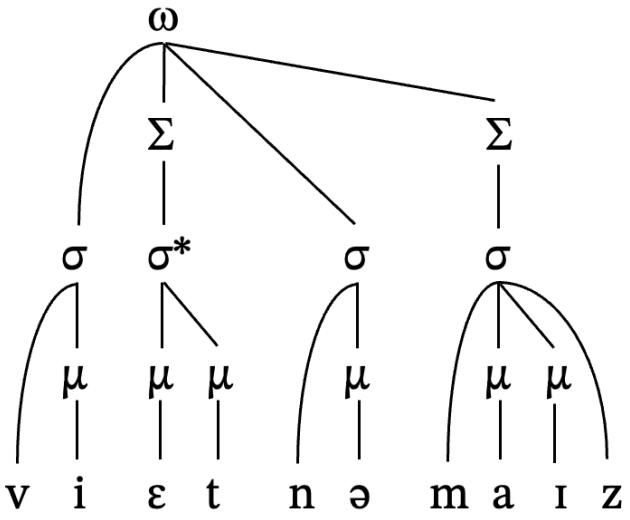
Lots of Σ-recursion in practice, e.g.,

"the stem-level phonology of English achieves exhaustive footing by means of adjunction"

(Bermúdez-Otero 2018b:127)

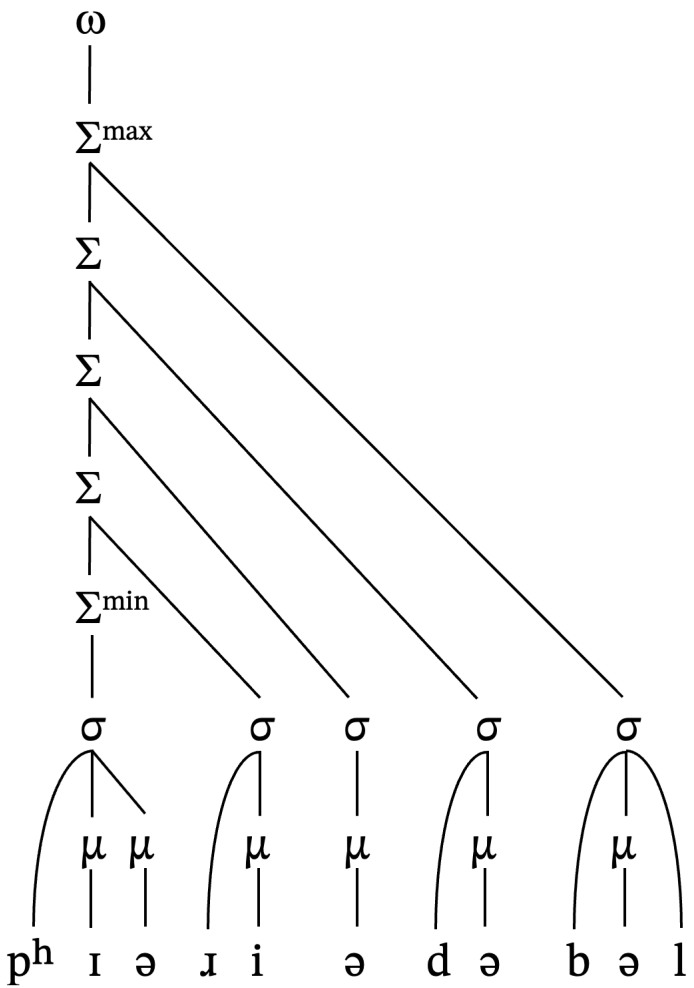


cf.



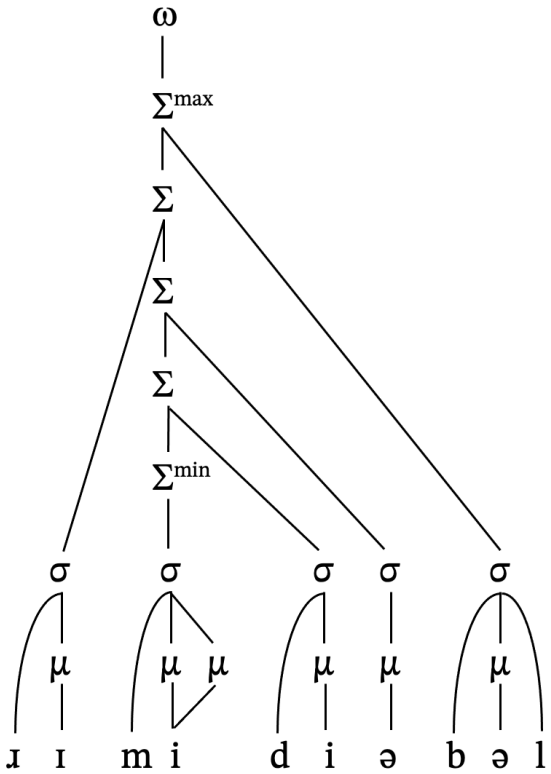
Vietnamize

Σ-recursion is simple enough when it's one-sided (Bermúdez-Otero 2018b)

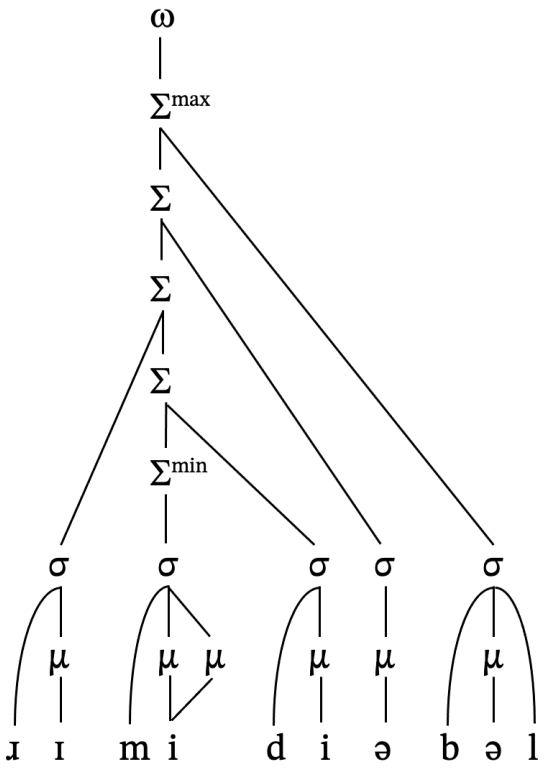


periodable

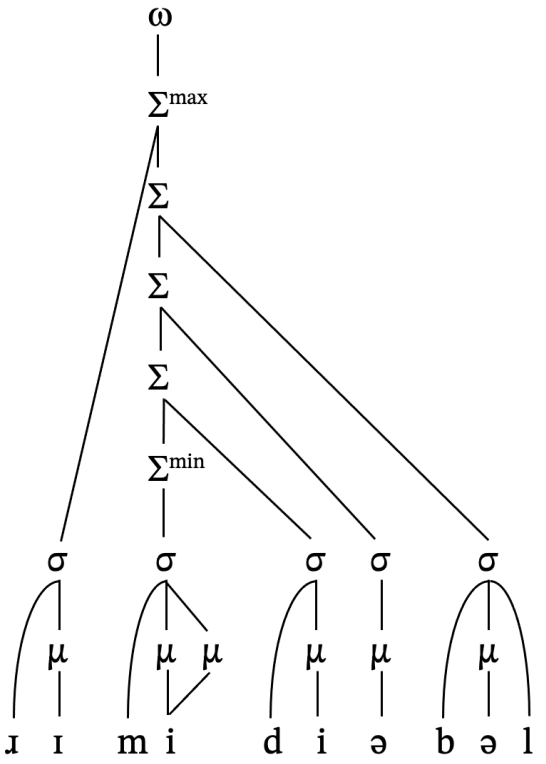
Σ-recursion is less determined when it's two-sided (see also Ito & Mester 2009b; Kabak & Revithiadou 2009; Vogel 2012; Golston 2021; etc.)



or

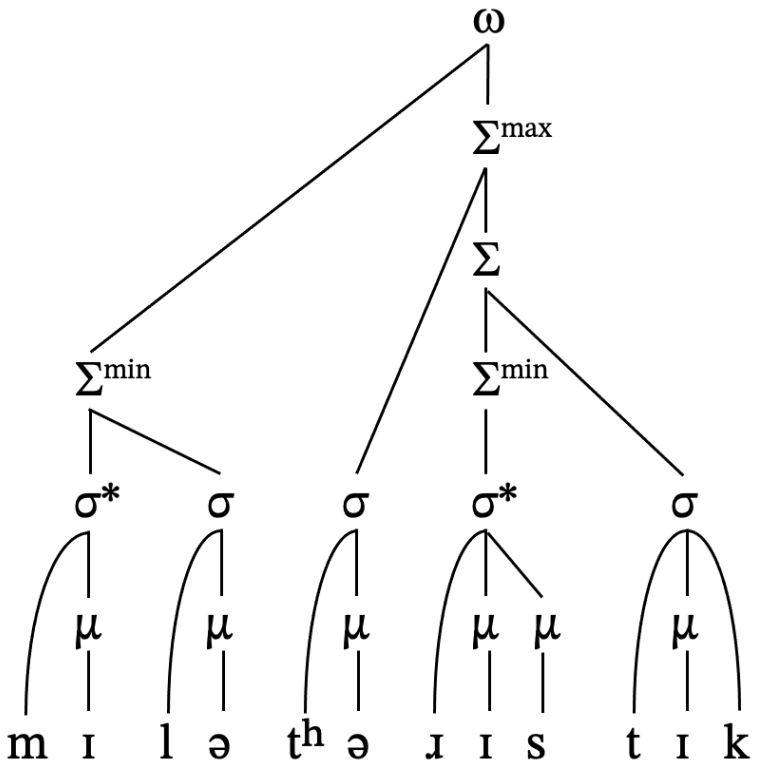


or

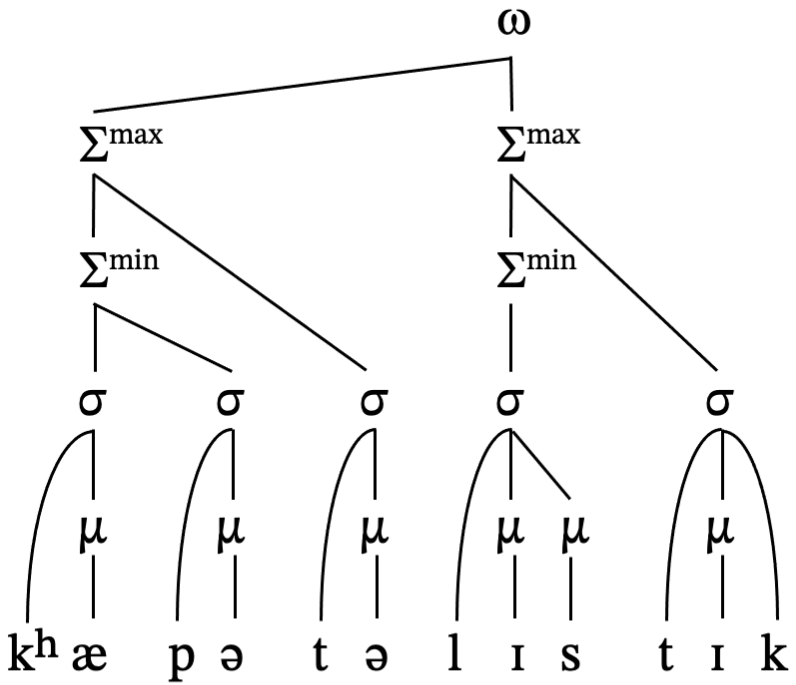


remediable

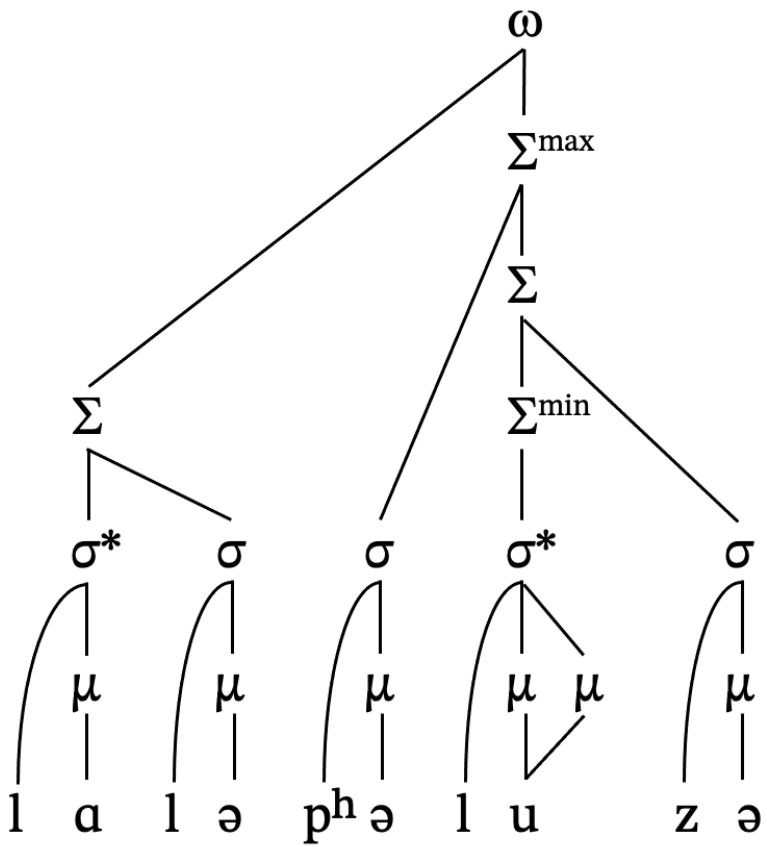
Σ-recursion has long been used for exceptional medial aspiration (Withgott 1982) and for exceptions to Withgott's Paradox (lots by Jensen, Davis, and Bermúdez-Otero)



militaristic



capitalistic



Σ-recursion is also invoked for prosodic morphology (Davis 2005; cf. McCarthy 1982b)

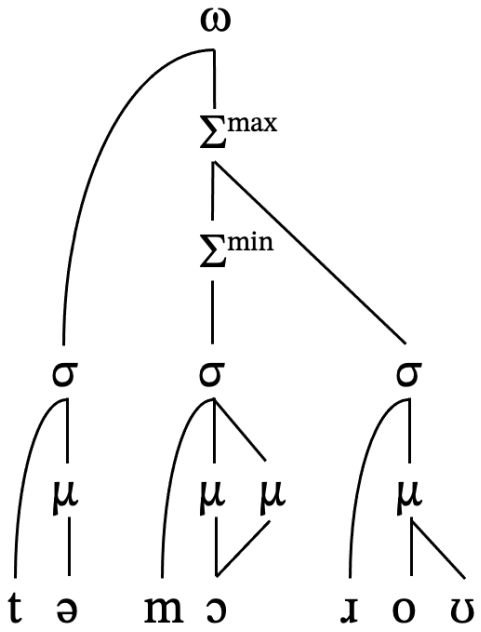
Lollapalooza → *Lolla-fuckin'-palooza; Lesbopalooza*; etc.

"... the strict layering doctrine is ... confronted with the ... problem: "Too much structure". In order to fulfill strict layering, representations have to be padded to fill every layer, leading to the positing of categories emptied of their intrinsic meaning. ...

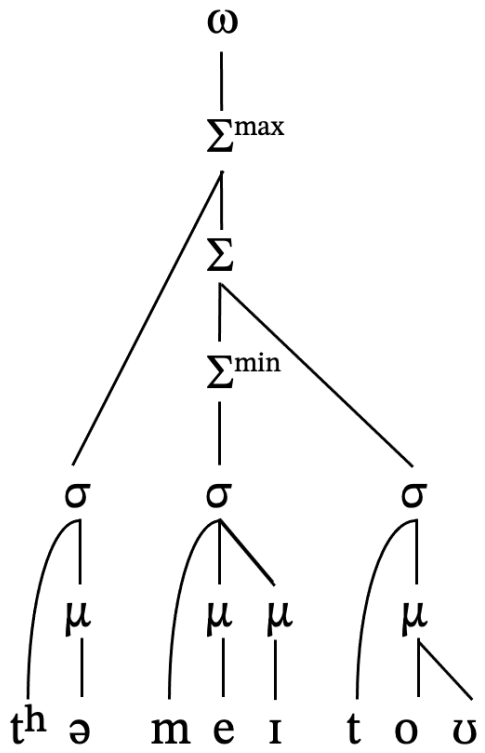
— a [Japanese] form like *anime* is structured as $[_{\omega}\ (_{f}\ \breve{\sigma}\breve{\sigma})\ \breve{\sigma}]$, with an unfooted last syllable directly dominated by ω, not as $[_{\omega}\ (_{f}\ \breve{\sigma}\breve{\sigma})\ (_{\text{“f”}}\ \breve{\sigma})]$, with a degenerate second foot "f", or as $[_{\omega}\ (_{F}\ (_{f}\ \breve{\sigma}\breve{\sigma})\ \breve{\sigma})]$, with a superordinate "superfoot" F." (Ito & Mester 2009:147)

Exception that proves the exhaustive footing rule?

(cf. Ito & Mester 2009b; Goldsmith 2011)



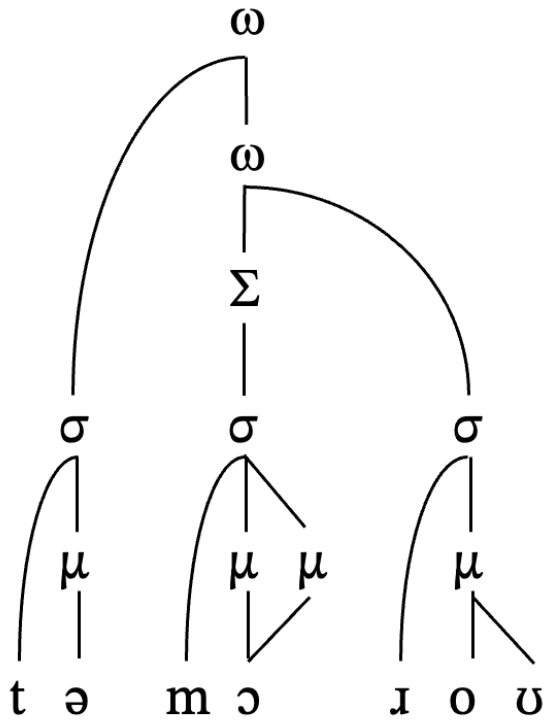
tomorrow



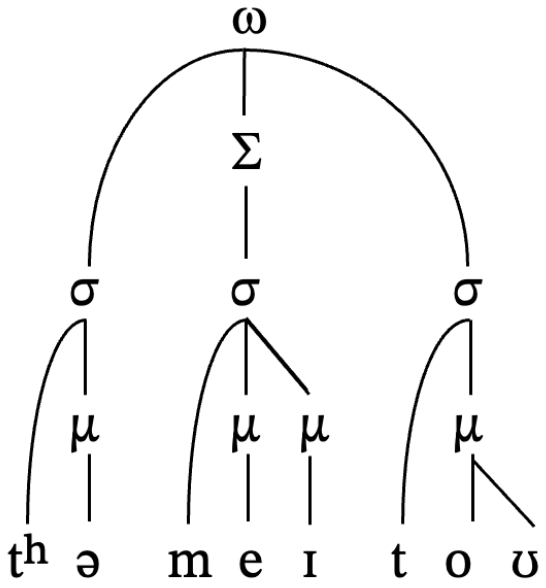
tomato

Using ω recursion instead

(Ito & Mester 2009b)



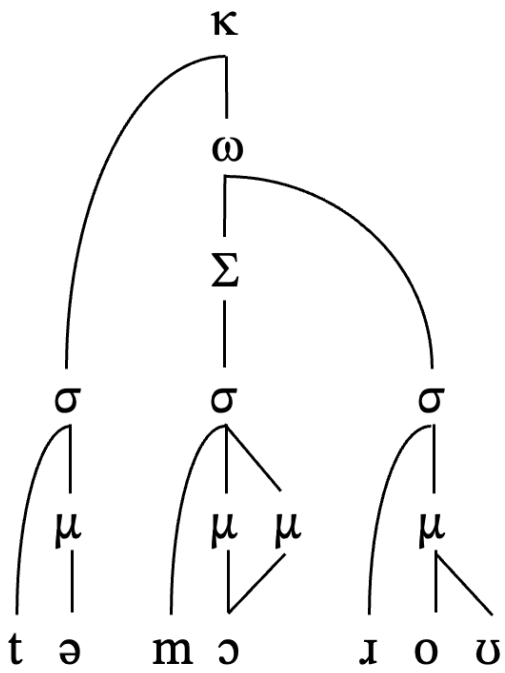
tomorrow



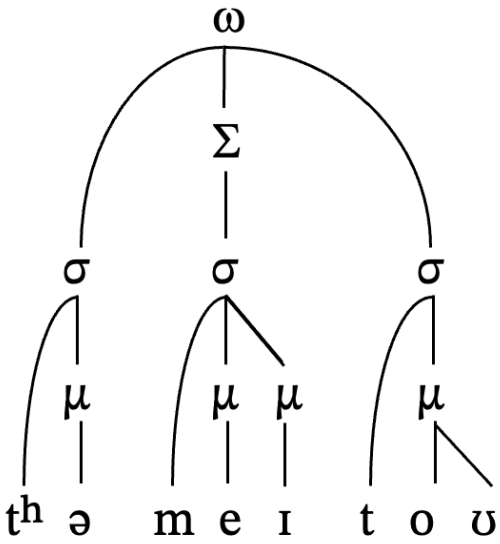
tomato

Using Clitic or Composite Group κ instead

(Nespor & Vogel 1986; Hayes 1989; Vogel 2009; et seq.)

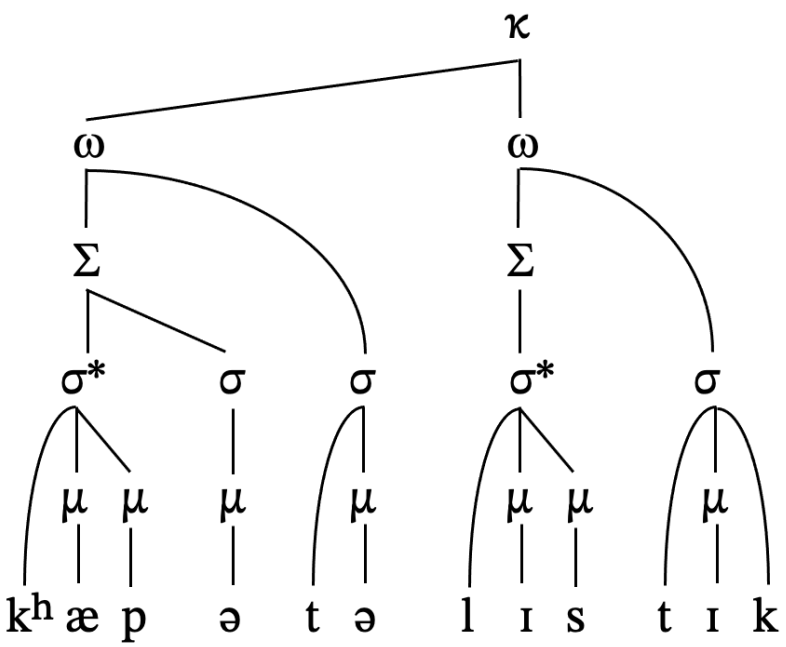


tomorrow

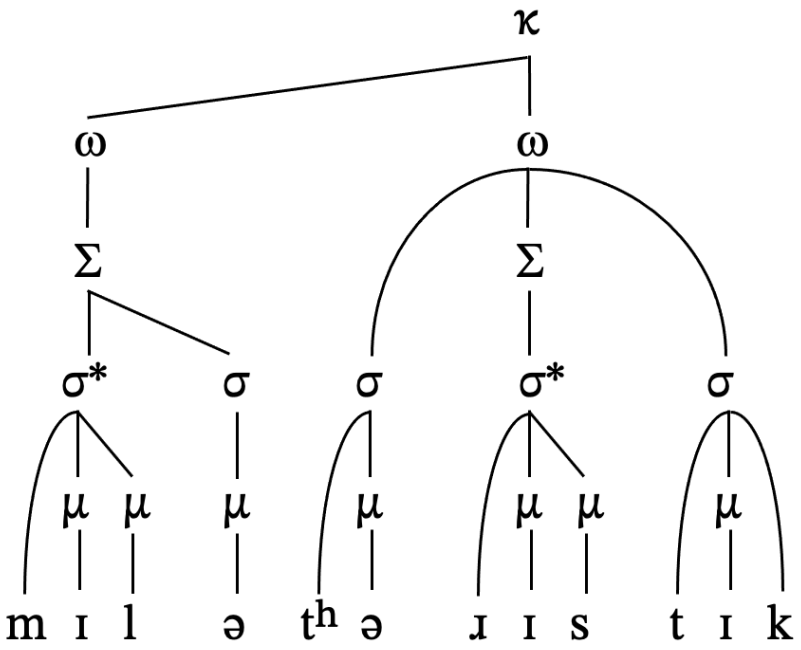


tomato

Using κ instead to model the Withgott effect as compound-like structures

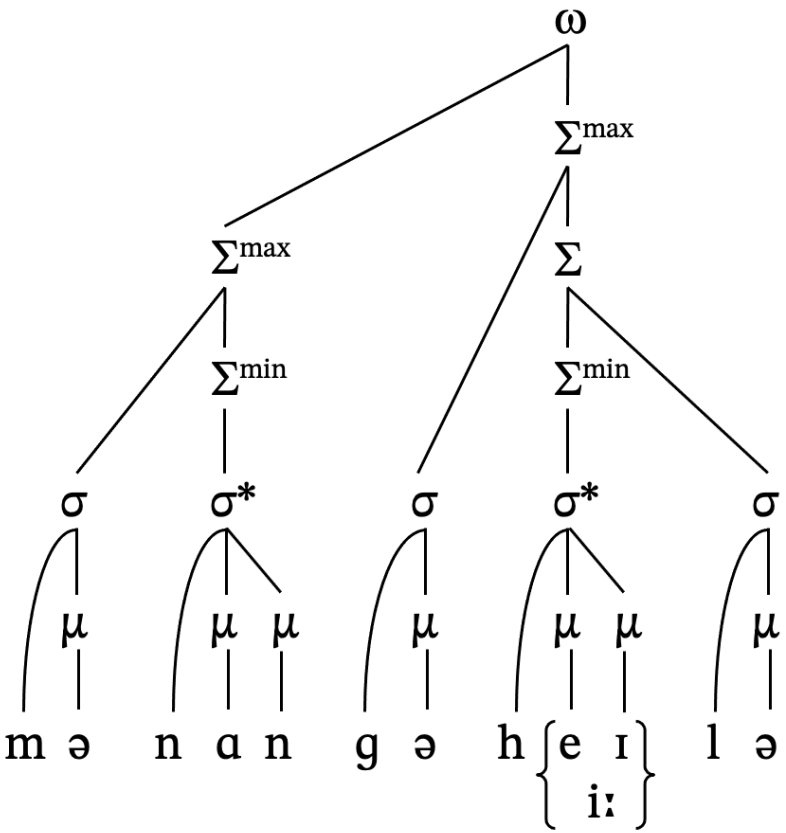


capitalistic



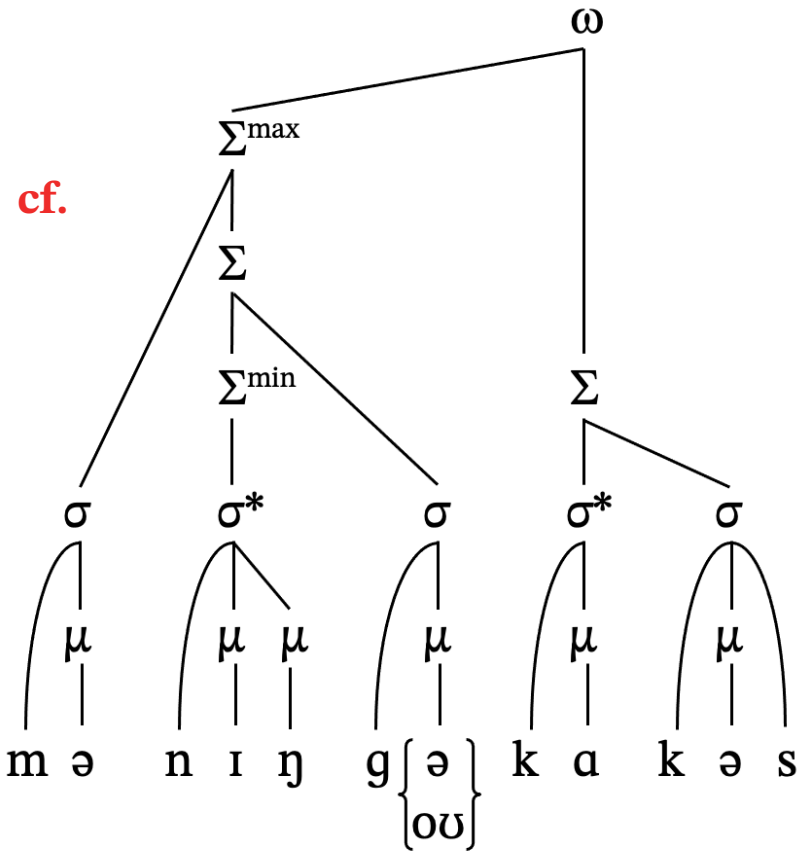
militaristic

Σ-recursion used for contrastive footing elsewhere — to capture the absence vs. absence of velar assimilation (Bermúdez-Otero 2015; 2018)



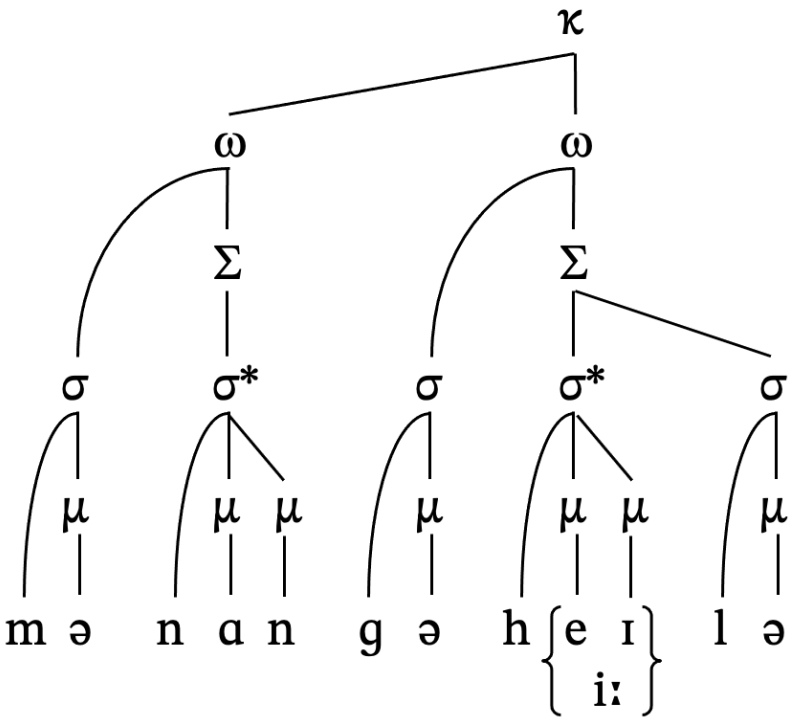
Monongahela

cf.

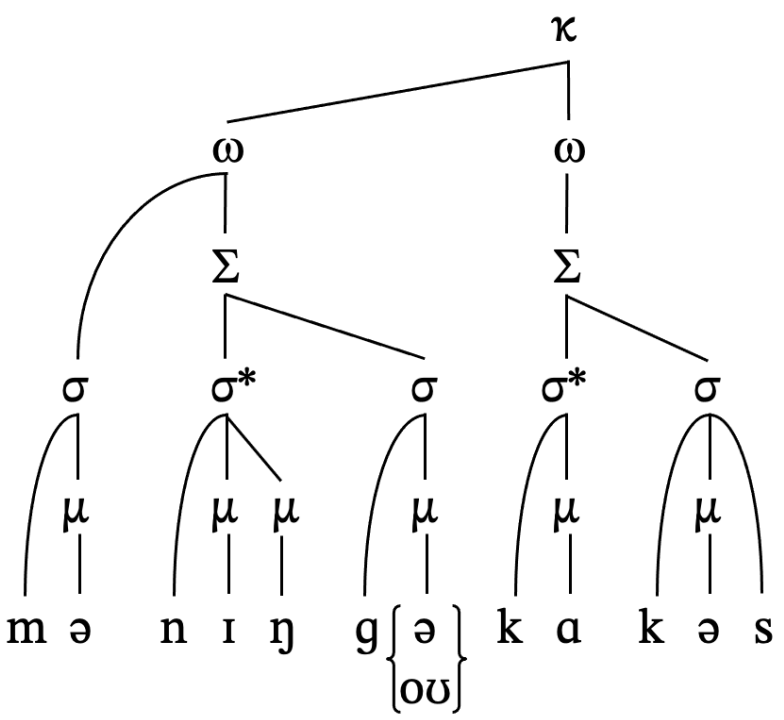


meningococcus

Using κ instead – again, assuming compound-like structures



Monongahela



meningococcus

UNIVERSITY OF CALGARY

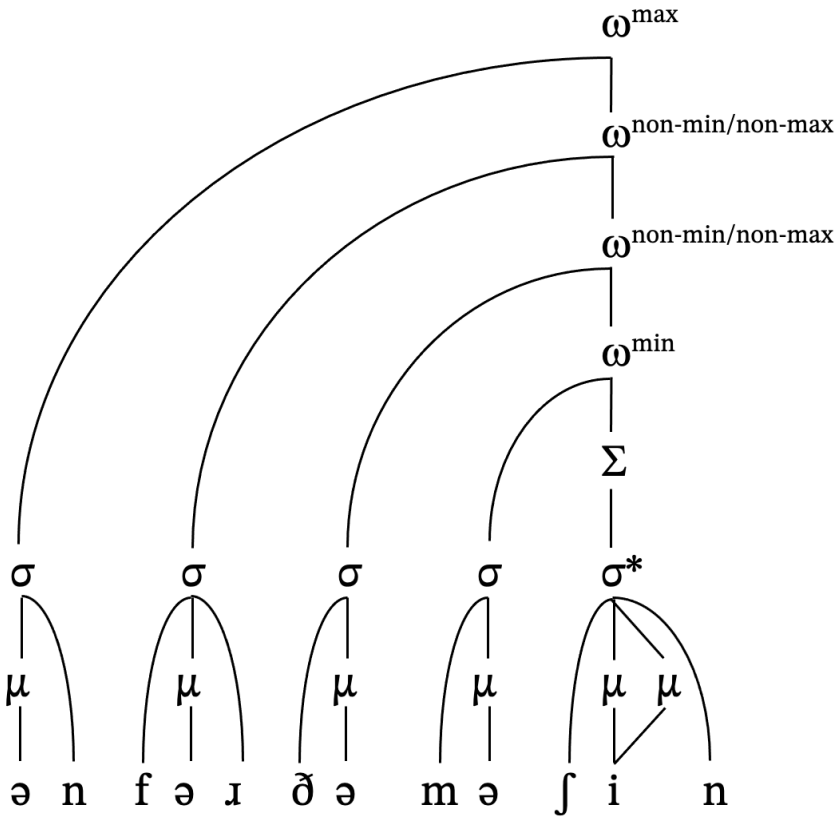
"The "too little structure" problem arises because strict layering caps the maximum depth of prosodic trees at *n*, where *n* is the number of categories in the prosodic hierarchy." (Ito & Mester 2009:147)

"This led to a proliferation of categories ("clitic group", "intermediate phrase", "accentual phrase", "minor phrase", …). With each new category, any hope of substantiating the hierarchy as a truly universal one receded further into the distance." (ibid.)

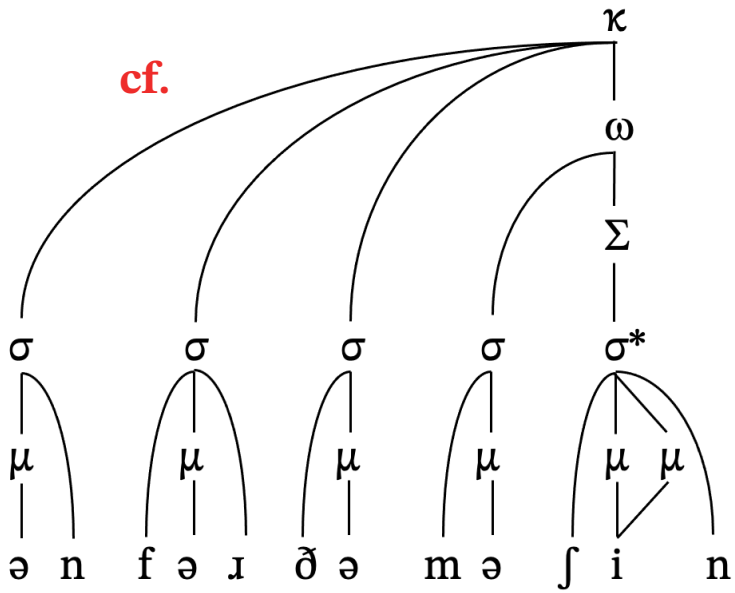
"While it clearly does not have the degree of recursivity seen in syntax, … the theory widely overshoots its mark by ruling out all recursivity whatsoever." (ibid.)

ω-recursion with proclitics

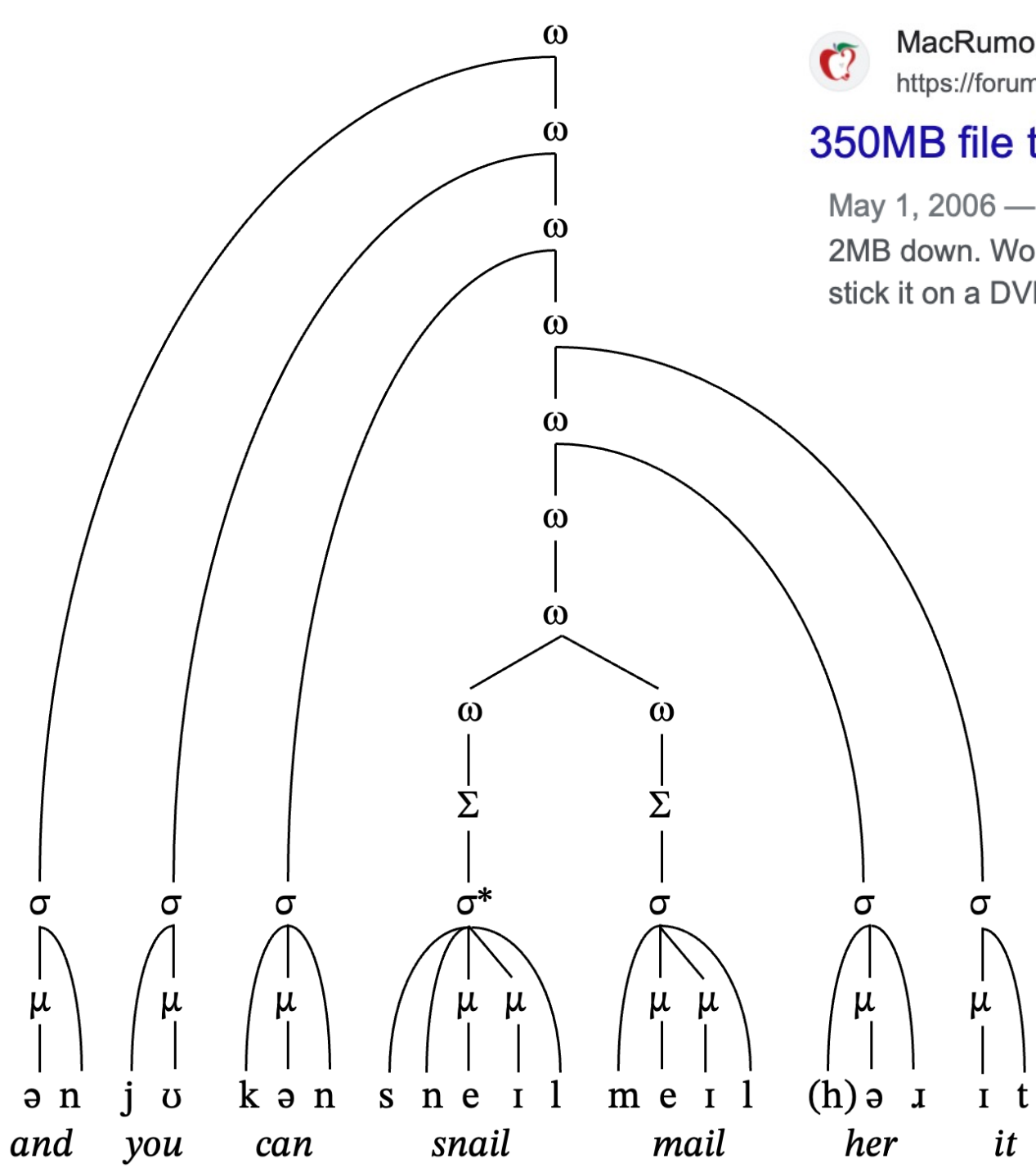
(Ito & Mester 2009; 2010; etc.)

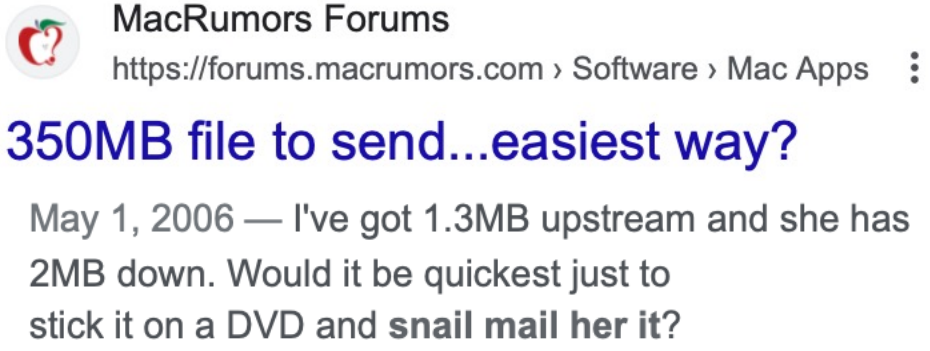


cf.



... and for the machine





Compounds and clitics with ω recursion

(Ito & Mester 2009a, b, 2021)

Note that there is indeterminacy about which clitic gets priority

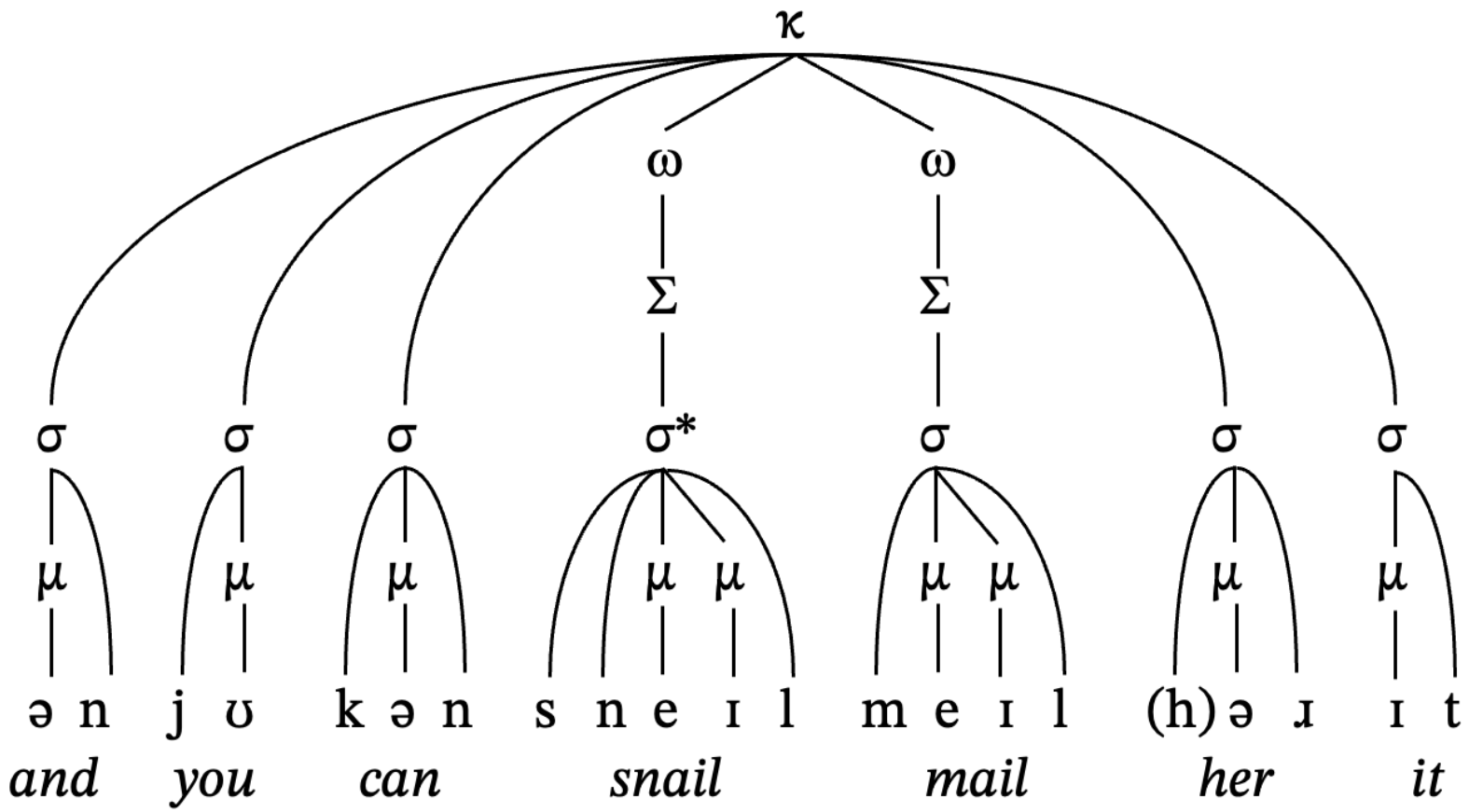
Compounds and clitics with Clitic or Composite Group κ

(Nespor & Vogel 1986; Hayes 1989; Vogel 2009; et seq.)

MacRumors Forums
https://forums.macrumors.com › Software › Mac Apps

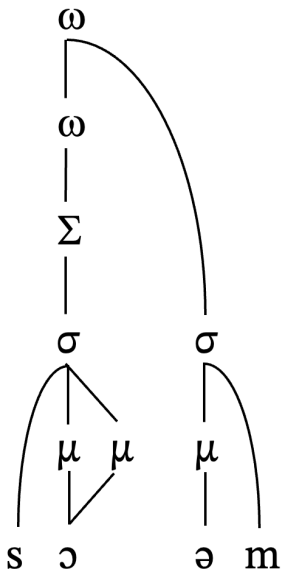
350MB file to send...easiest way?

May 1, 2006 — I've got 1.3MB upstream and she has 2MB down. Would it be quickest just to stick it on a DVD and **snail mail her it**?

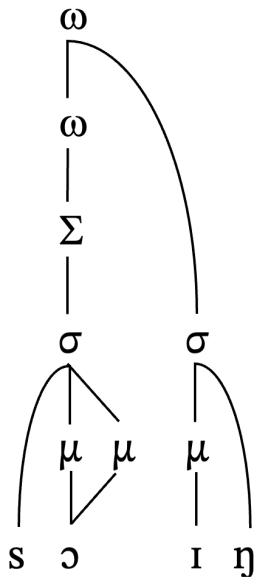


ω-recursion with enclitics and all Level II suffixes (Inkelas 1989; McCarthy 1993; Selkirk 1995; etc.)

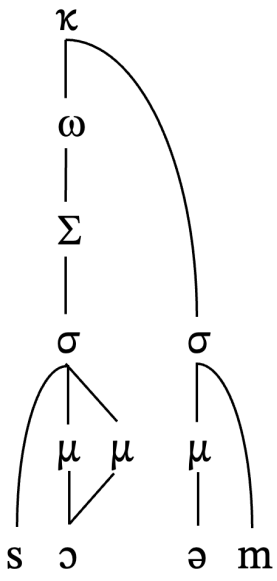
cf. Composite Group κ in Vogel (2009 et seq.)



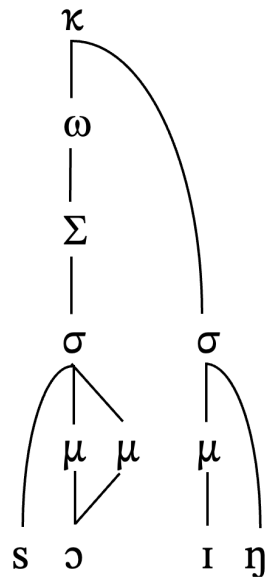
saw 'em



sawing



saw 'em



sawing

The Phonology of Compounds

Irene Vogel

https://doi.org/10.1093/acrefore/9780199384655.013.615

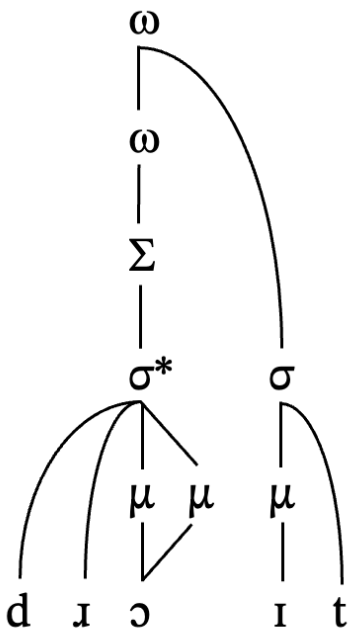
Published online: 28 June 2021

Summary

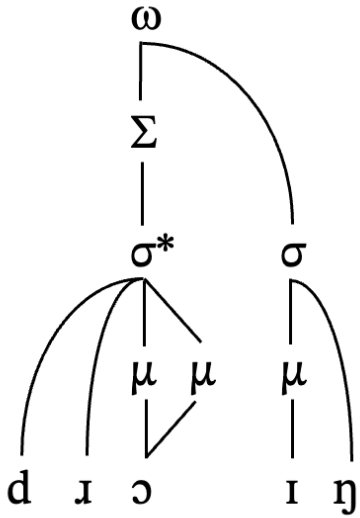
A number of recent developments in phonological theory, beginning with *The Sound Pattern of English*, are particularly relevant to the phonology of compounds. They address both the phonological phenomena that apply to compound words and the phonological structures that are required as the domains of these phenomena: segmental and nonsegmental phenomena that operate within each member of a compound separately, as well as at the juncture between the members of compounds and throughout compounds as a whole. In all cases, what is crucial for the operation of the phonological phenomena of compounds is phonological structure, in terms of constituents of the Prosodic Hierarchy, as opposed to morphosyntactic structure. Specifically, only two phonological constituents are required, the Phonological Word, which provides the domain for phenomena that apply to the individual members of compounds and at their junctures, and a larger constituent that groups the members of compounds together. The nature of the latter is somewhat controversial, the main issue being whether or not there is a constituent in the Prosodic Hierarchy between the Phonological Word and the Phonological Phrase. When present, this constituent, the Composite Group (revised from the original Clitic Group), includes the members of compounds, as well as "stray" elements such as clitics and "Level 2" affixes. In its absence,

"There is a clear difference in phrasing between such word+enclitic collocations and stem+level II suffix combinations… *visit it* and *draw it* are extended prosodic word structures, whereas *visited* and *drawing* are prosodified as single (nonextended) prosodic words" (Ito & Mester 2009b:252)

See also Sherer (1994), Raffelsiefen (2005), Bermúdez-Otero (2011), etc.

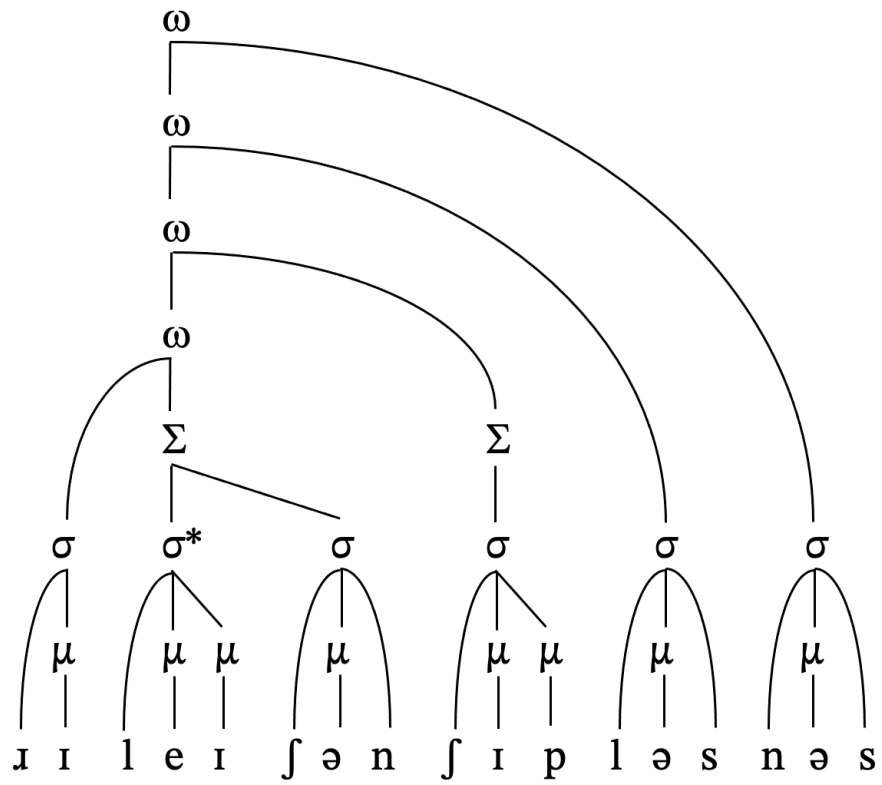


draw it

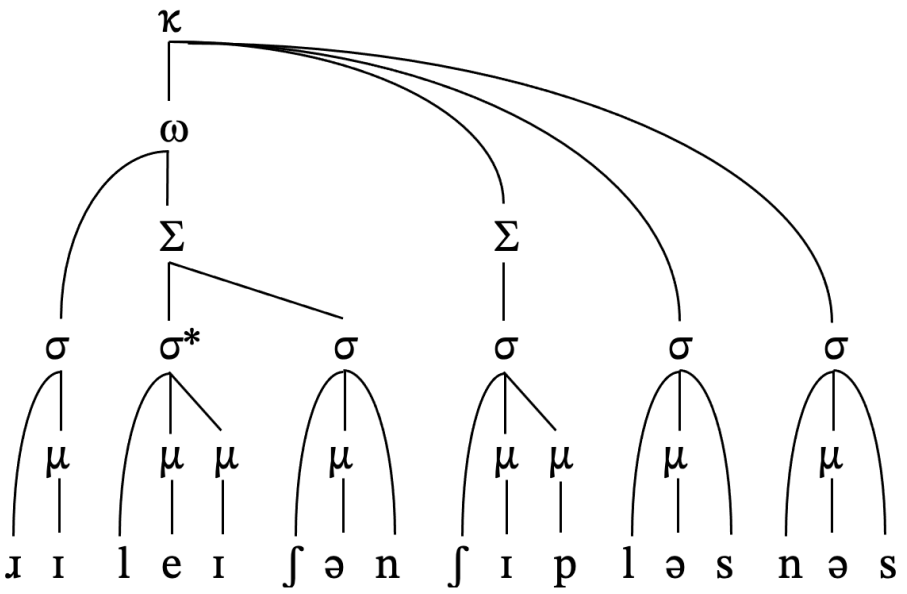


drawing

ω-recursion with consonant-initial Level II suffixes (Sherer 1994; Raffelsiefen 2005; etc.)



cf. Composite Group κ in Vogel (2009 et seq.)



relationshiplessness

Hayes, Bruce. 2000. Gradient well-formedness in Optimality Theory. In Joost Dekkers, Frank van der Leeuw & Jeroen van de Weijer (eds.), *Optimality Theory: phonology, syntax and acquisition*, 88–120. Oxford, U.K.: Oxford University Press

UNIVERSITY OF CALGARY

(20)

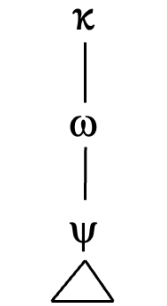
Word set	Average difference score	Significance
a. *light, Louanne*	4.62	$p < .0001$
b. *gray-ling, gai-ly, free-ly*	1.78	$p = .0527$
c. *Mailer, Hayley, Greeley, Daley*	0.74	$p = .0006$
d. *mail-er, hail-y, gale-y, feel-y*	−0.97	$p = .0031$
e. *mail it*	−3.30	$p = .0021$
f. *mail, help*	−5.47	

It can be seen that all the results but one are highly significant statistically, and that the remaining one is near-significant. Keeping the near-significant outcome as a case on which further checking should be done, I will assume for present purposes that all differences given here should be accounted for in an adequate analysis.[11]

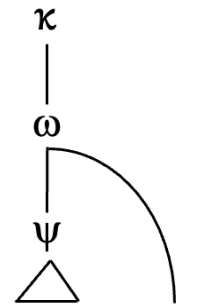
κ = Clitic or Composite Group (CG)
(Nespor & Vogel 1986; Hayes 1989; Vogel 2009; et seq.)

ω = Prosodic or Phonological Word (PW)
(McCarthy 1993; cf. Sherer 1994, Raffelsiefen 2005)

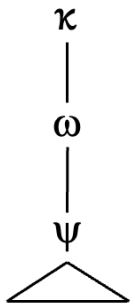
ψ = Prosodic Stem or PStem (PS)
(Downing 1998, 1999, etc.; Downing & Maxwell 2020)



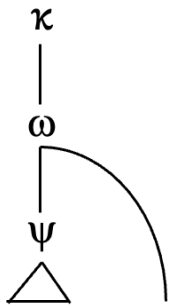
light
Louanne



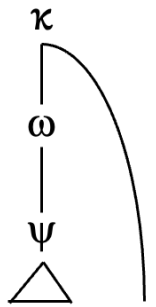
gray *-ling*
gai *-ly*
free *-ly*



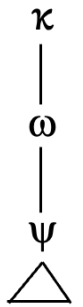
Mailer
Hayley
Greeley
Daley



mail *-er*
hail *-ing*
gale *-y*
feel *-y*



mail *it*



mail
help

Sproat, Richard & Osamu Fujimura. 1993. Allophonic variation of English /l/ and its implications for phonetic implementation. *Journal of Phonetics* 21. 291–311.

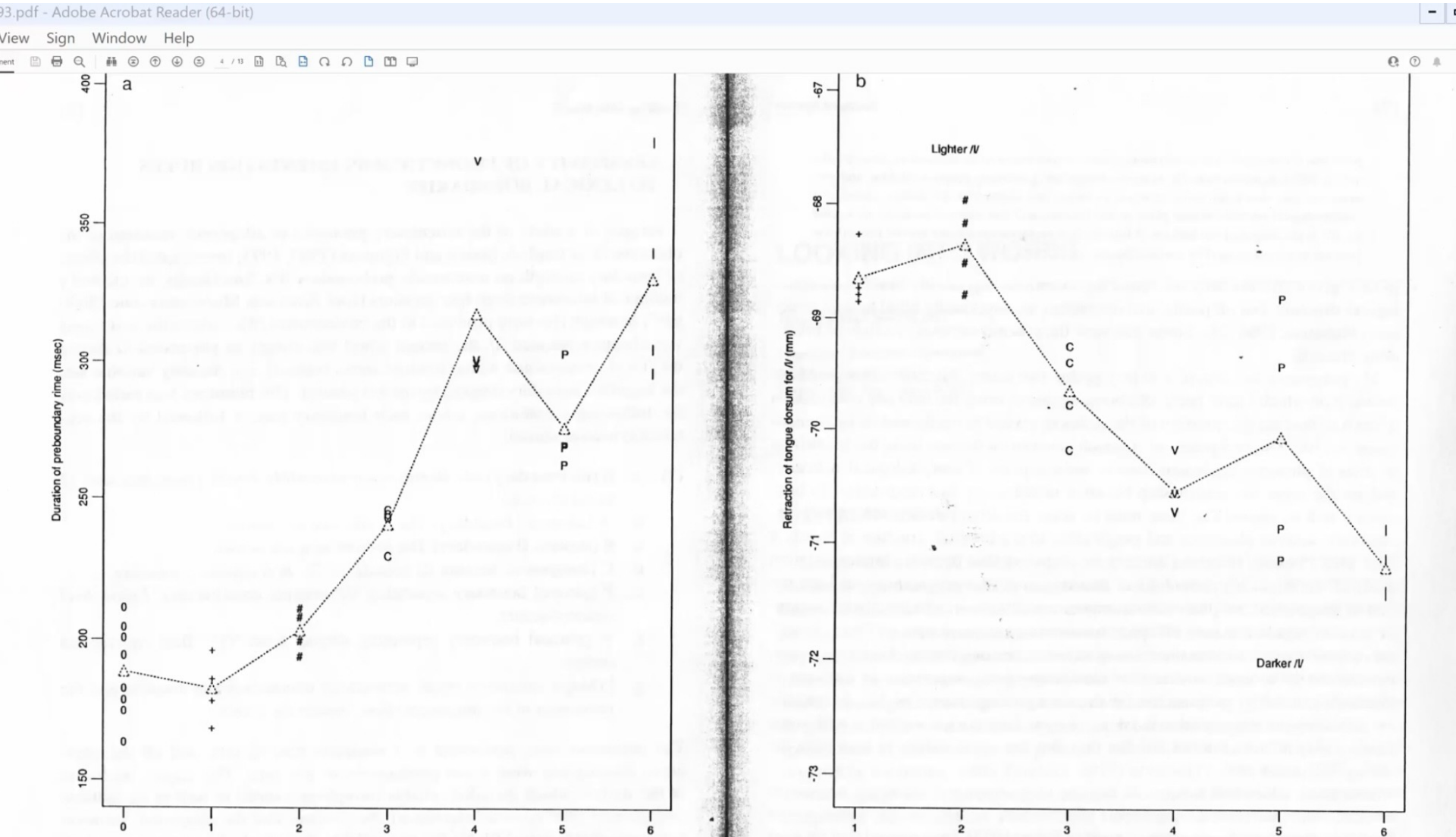
UNIVERSITY OF CALGARY

Environment	No.	Sentence	Plotting character
Before /h/	1	Mr Beel Hikkóvsky's from Madison.	"h"
Before /h/	2	Mr Neal Hikkóvsky's from Madison.	"h"
Major intonation boundary	3	Beel, equate the actors.	"|"
Major intonation boundary	4	Neal, equate the actors.	"|"
VP phrase boundary	5	Beel equates the actors.	"V"
VP phrase boundary	6	Neal equates the actors.	"V"
VP-internal boundary	7	I gave Beel equated actors.	"P"
VP-internal boundary	8	I gave Neal equated actors.	"P"
Compound-internal boundary	9	The beel-equator's amazing.	"C"
Compound-internal boundary	10	The seal-equipment's amazing.	"C"
"#" boundary	11	The beel-ing men are actors.	"#"
"#" boundary	12	The kneel-ing men are actors.	"#"
"+" boundary	13	The beel-ic men are actors.	"+"
"+" boundary	14	The tel-ic men are actors.	"+"
No boundary	15	Mr Beelik wants actors.	"%"
No boundary	16	Mr Beelik's from Madison.	"%"
Word initial	17	Mr B. Likkóvsky's from Madison.	"i"

"+" < "#" < "C" < "h" < "P" < "V" < "|"

Sproat, Richard. 1993. Looking into words. In Sharon Hargus & Ellen M. Kaisse (eds.), *Phonetics and phonology: Studies in lexical phonology*, vol. 4, 173–195. San Diego, CA: Academic Press

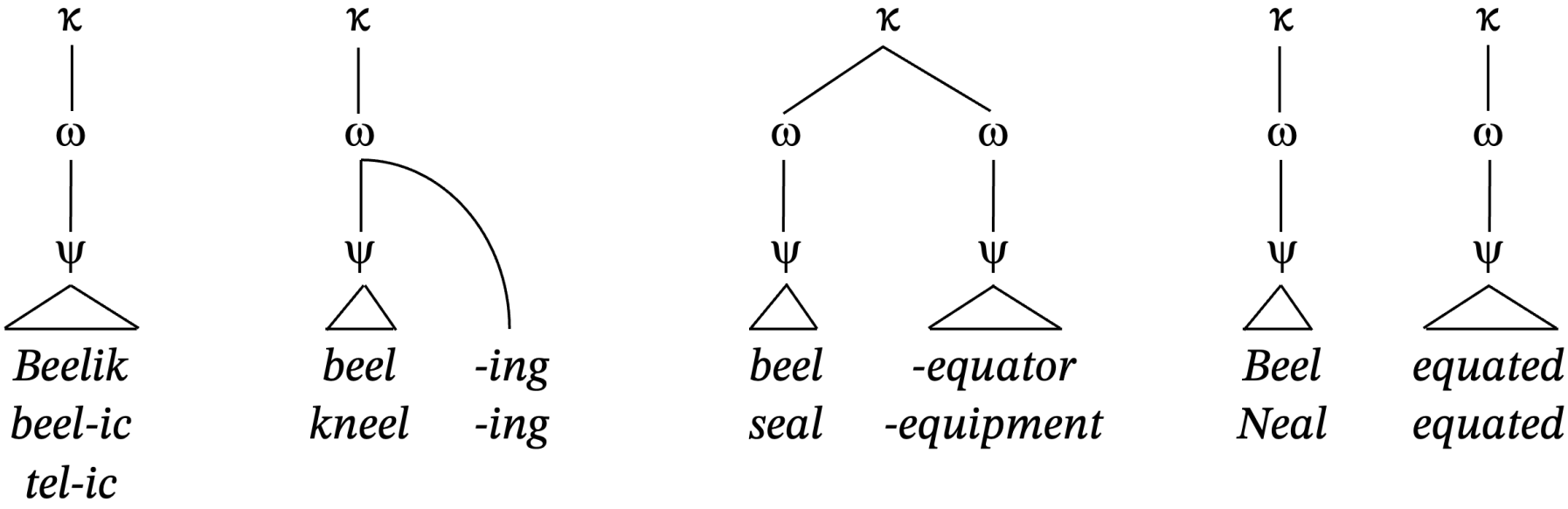
UNIVERSITY OF CALGARY



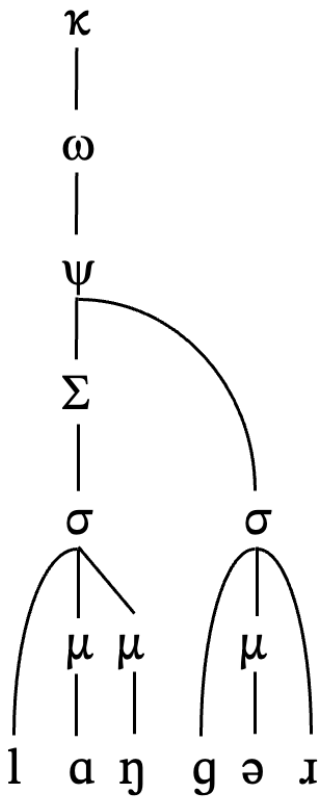
κ = Clitic or Composite Group (CG)
(Nespor & Vogel 1986; Hayes 1989; Vogel 2009; et seq.)

ω = Prosodic or Phonological Word (PW)
(McCarthy 1993; cf. Sherer 1994, Raffelsiefen 2005)

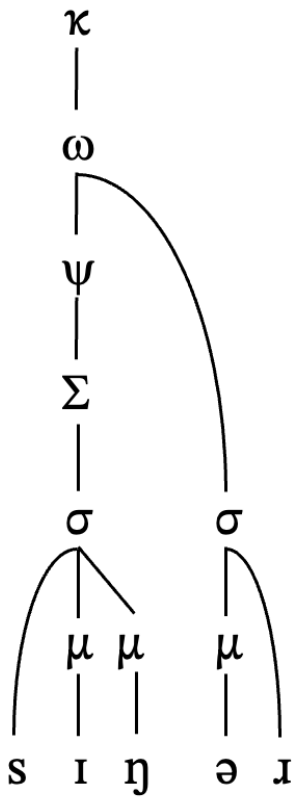
ψ = Prosodic Stem or PStem (PS)
(Downing 1998, 1999, etc.; Downing & Maxwell 2020)



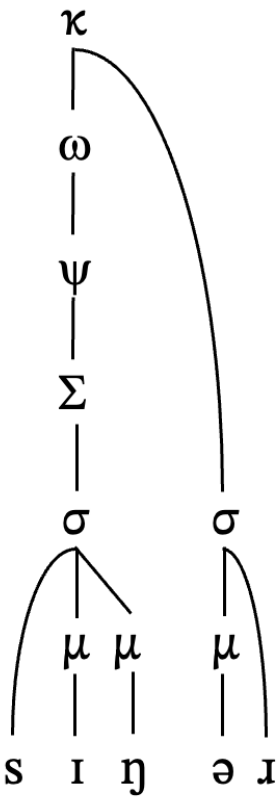
Nuthin' but a 'G' Thang



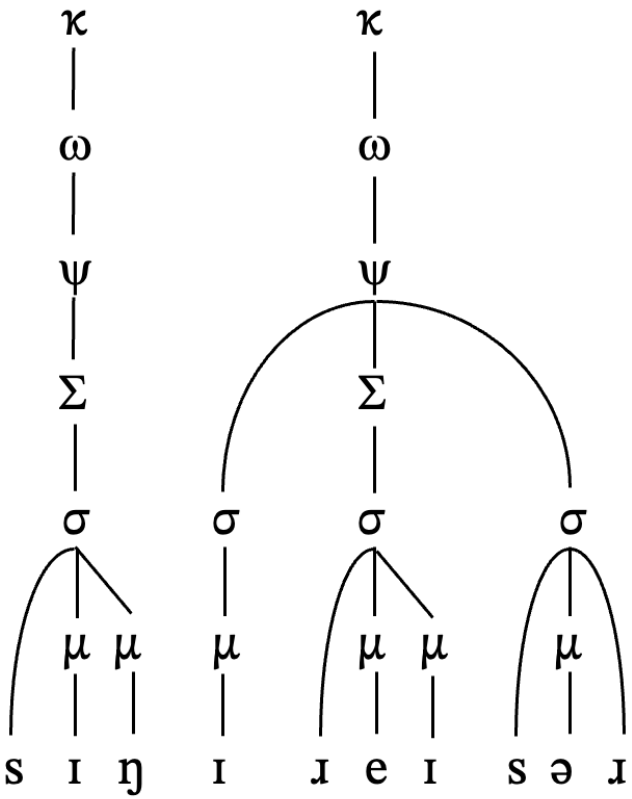
long-er



sing-er

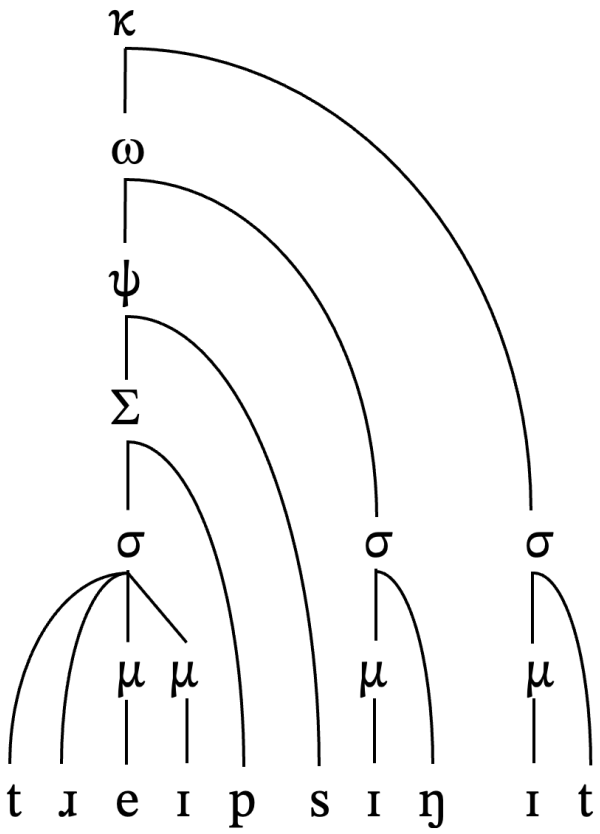


sing (h)er "X"

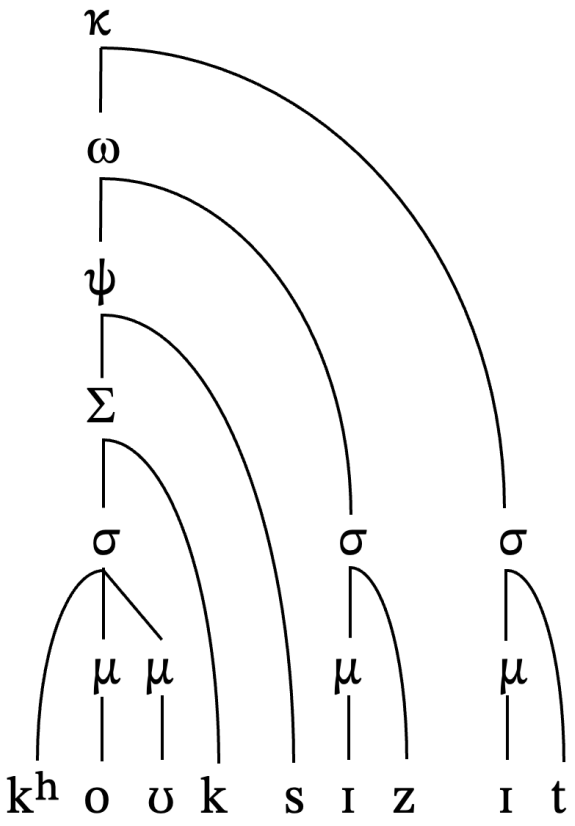


sing "Eraser"

Superheavy-final stems are now possible ω-internally, e.g.



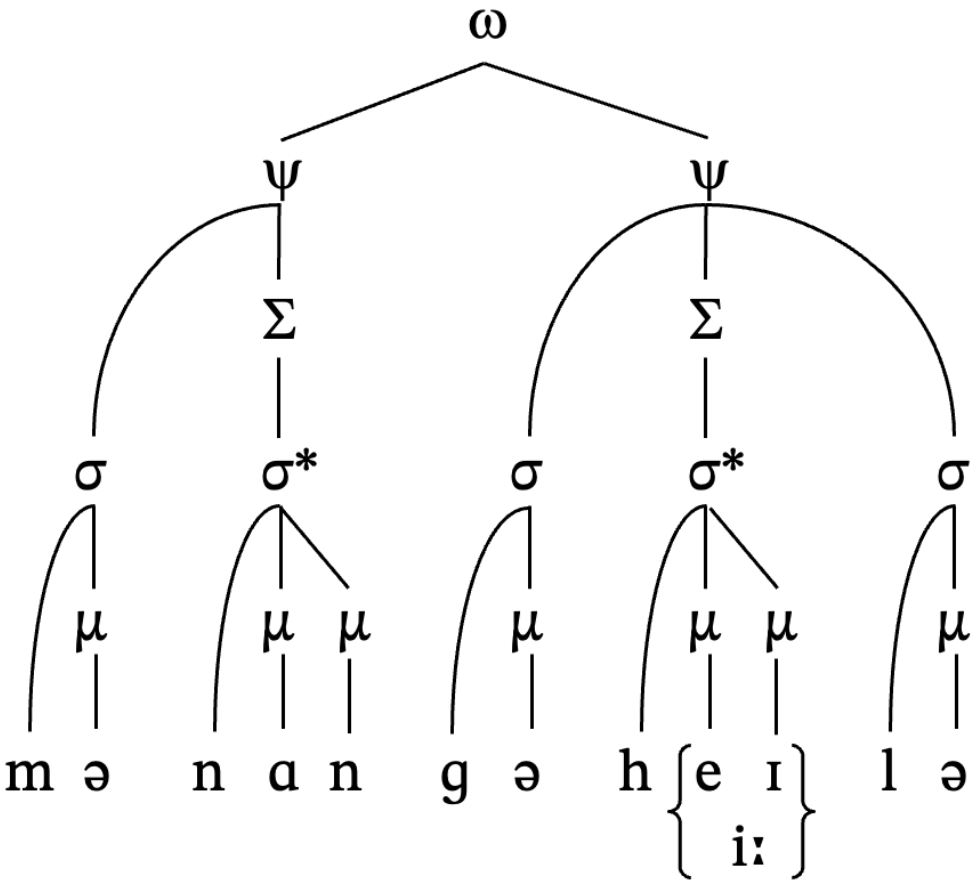
traipsing it



coaxes it

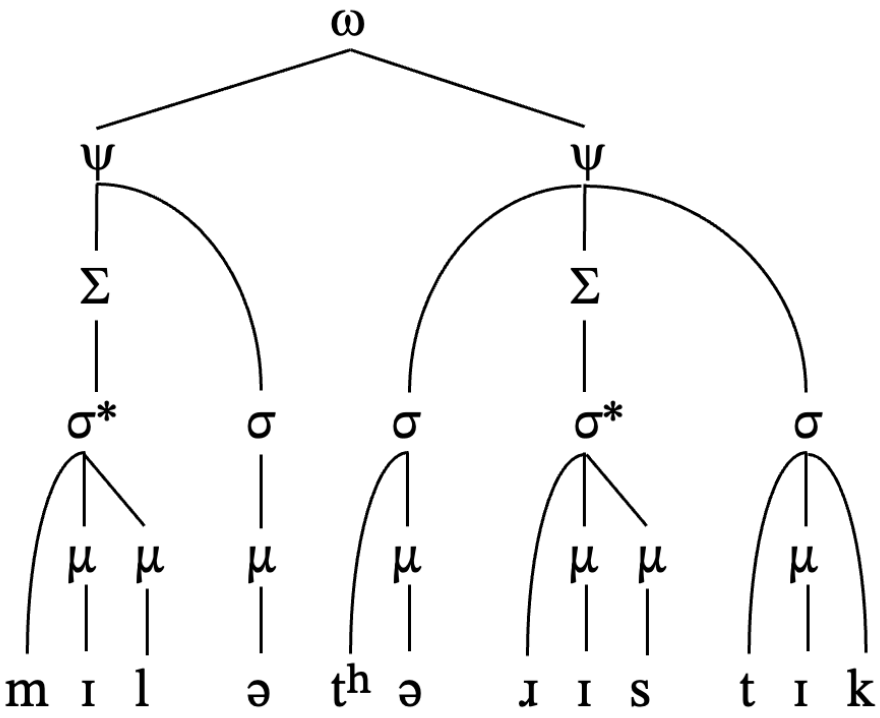
(The *s*'s are probably resyllabified as onsets. Resyllabification is definitely blocked at the left edge of ψ and ω, but uncertain about the right edge of ψ.)

‘Monongahela’ reanalyzed as a *pseudocompound* which I define as a ω with more than one ψ

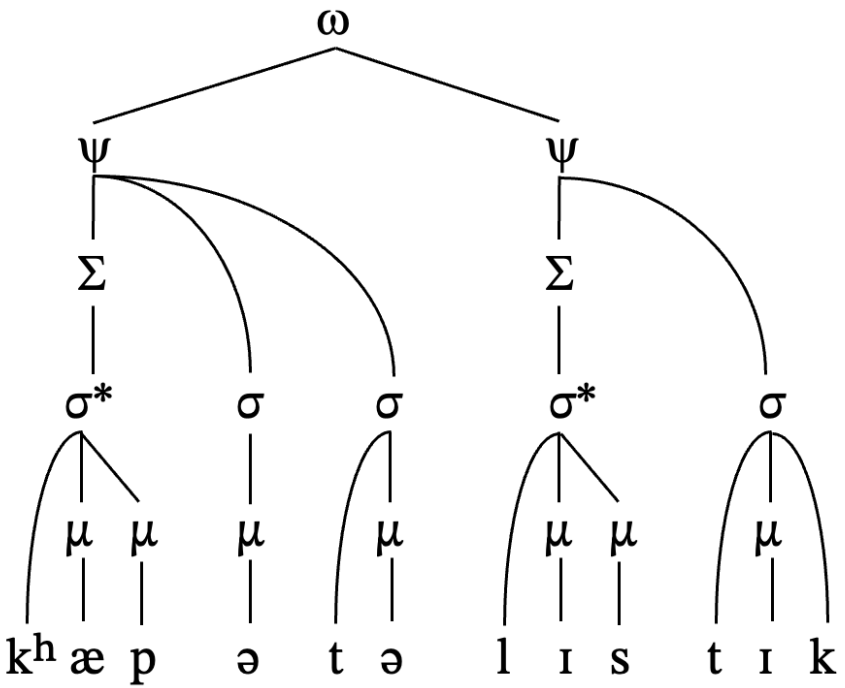


Monongahela

Withgott effect reanalyzed with *pseudocompounds*



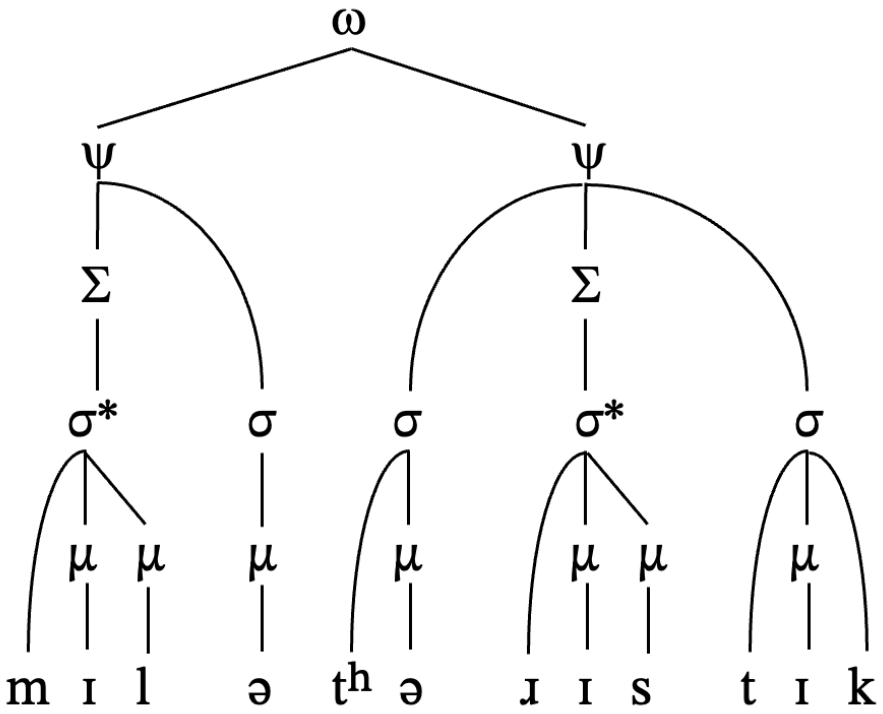
militaristic



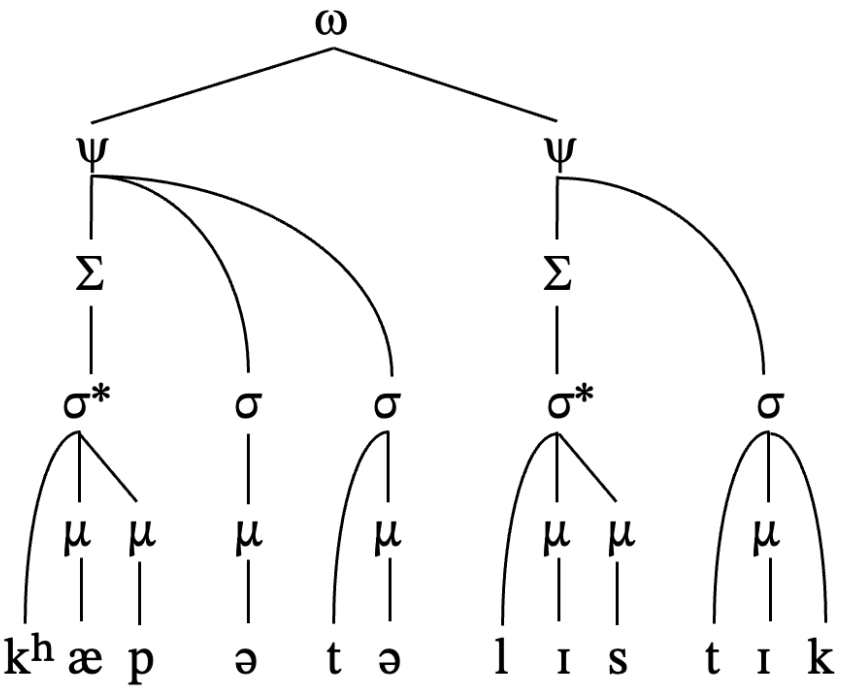
capitalistic

This is a better solution because the first ψ is no longer expected to show ω-final boundary lengthening effect (cf. Sproat 1993 above)

[Thanks to Ricardo Bermúdez-Otero for valuable discussion on this point]

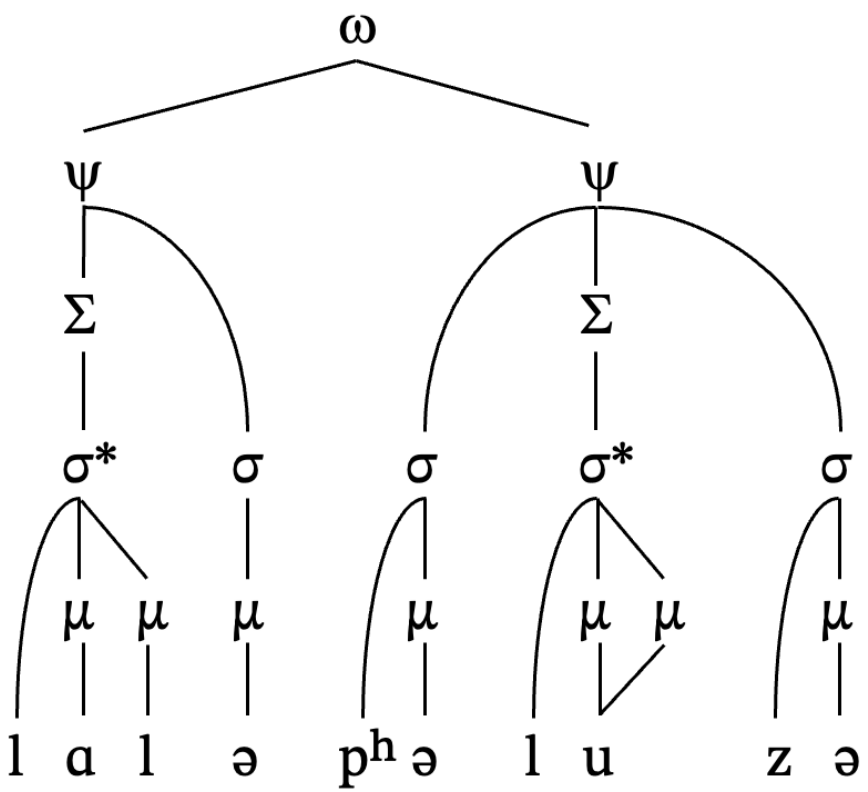


militaristic



capitalistic

Pseudocompound solution for prosodic-morphological patterns, too



Lollapalooza

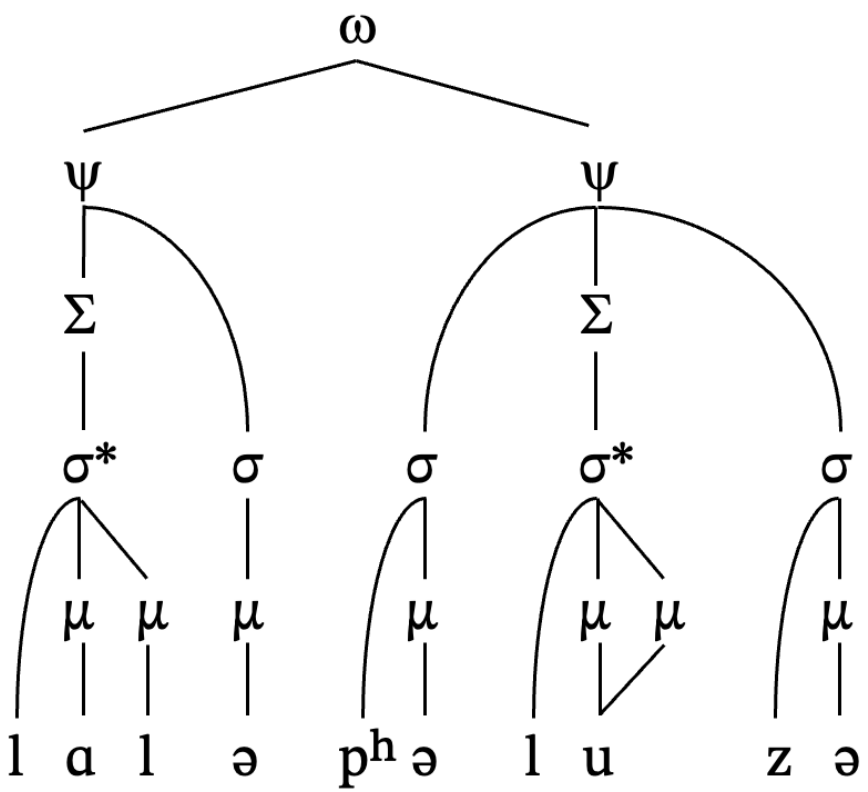
Lolla-fuckin'-palooza

(expletive is prefixed to the prosodic stem)

Lollapa-fuckin'-looza

(expletive is prefixed to the pitch-accented foot

Again, this is a better solution because the first ψ is no longer expected to show ω-final boundary lengthening effect (cf. Sproat 1993 above)



Lollapalooza

Lolla-fuckin'-palooza

(expletive is prefixed to the prosodic stem)

Lollapa-fuckin'-looza

(expletive is prefixed to the pitch-accented foot

Proposal: English systematically creates pseudocompounds to avoid stem-medial stress lapses

Withgott's paradox disappears if words with medial lapses are in fact phonological pseudocompounds:

$[[\textbf{\textit{M}}\overset{*}{\breve{\textbf{\textit{a}}}}\textbf{\textit{n}}i]_{\psi}[to\textbf{\textit{woc}}]_{\psi}]_{\omega}$ cf. $[[\overset{*}{\breve{\textbf{\textit{a}}}}\textbf{\textit{p}}ple]_{\omega}[\textbf{\textit{cake}}]_{\omega}]_{\kappa}$

$[[\textbf{\textit{N}}\overset{*}{\breve{\textbf{\textit{a}}}}\textbf{\textit{v}}ra]_{\psi}[ti\textbf{\textit{l}}\overset{*}{\breve{\textbf{\textit{o}}}}va]_{\psi}]_{\omega}$ cf. $[[\overset{*}{\breve{\textbf{\textit{a}}}}\textbf{\textit{p}}ple]_{\omega}[\textbf{\textit{p}}\overset{*}{\textbf{\textit{i}}}\textbf{\textit{e}}]_{\omega}]_{\kappa}$

I suggest that long words are broken up in this way to avoid ψ-internal stress lapses: *$[\textbf{\textit{M}}\overset{*}{\breve{\textbf{\textit{a}}}}\textbf{\textit{n}}\underline{ito}\textbf{\textit{woc}}]_{\psi}$, *$[\textbf{\textit{N}}\overset{*}{\breve{\textbf{\textit{a}}}}\textbf{\textit{v}}\underline{rati}\textbf{\textit{l}}\overset{*}{\breve{\textbf{\textit{o}}}}va]_{\psi}$

*LAPSE (Elenbaas 1999; Kager 2003; Gordon 2002:502; Alber 2005:500; cf. Selkirk's 1984 'Anti-Lapse Filter')

English phonology is much more tolerant of adjacent unstressed syllables across stems (Selkirk 1996:195)

*LAPSE/ψ >> *LAPSE/ω, MATCH-WORD

↓

"Assign one violation for every lexical word in the syntactic component that does not stand in a correspondence relation with a prosodic word in the phonological component"

(Elfner 2012, p. 241; see also Weir 2012, p. 111; Bennett et al. 2015, p. 34)

Pseudocompounding may represent an Anglo-Saxon style nativizing process

> “English has basically two types of word — the familiar homely sounding and typically very short words … and the more learned, foreign-sounding and characteristically rather long words” (Quirk 1974, p. 138)

Highlight: Heretofore intractable *Luxipalilla* problem

(Pater 2000:269; Collie 2007:319–326)

Why can't heavy-initial words like *Luxipalilla*, *Hardecanute*, *Hōnokaōpe*, etc. be footed *[(*Lùx*)(*ìpa*)(*lílla*)], *[(*Hàr*)(*dèca*)(*núte*)], etc.?

Perhaps because a lapse-breaking internal ψ-boundary intervenes in such cases: $[[Lùxi]_{\psi}[palílla]_{\psi}]_{\omega}$, $[[Hàrde]_{\psi}[canúte]_{\psi}]_{\omega}$

Observe the ψ-initial allophony here, too: ...[p^h]*alílla*, ...[k^h]*anúte*

Envoi: If English systematically creates pseudocompounds to avoid stem-medial stress lapses, does it do the same to avoid stem-medial stress clashes?

Northern (Canadian) Raising (Bermudez-Otero 2019) and Southern Raising (Moreton 2016) may be blocked by stem boundaries as well as in stress clash contexts, e.g.,

titanic 'titan-like', but more often 'awesome, enormous'
citation 'act of citing', but more often 'quotation/commendation/summons'

Very tentative proposal: the stress clash is removed by pseudocompounding but this may be blocked if the to-be-split stem is too transparent:

"cyclic overapplication [of Southern Raising] cases

typology 'study of types' also 'study of crosslinguistic variation'
Hittitology 'study of Hittite'" (Bermudez-Otero 2019:9)

Canadian English (Barber 2004)

ty·phoid /'tɔifɔid/ ● *noun* **1** (in full **typhoid fever**) a severe infectious fever caused by the bacterium *Salmonella typhi*, involving a rash, myalgia, and in some cases delirium and intestinal inflammation. **2** a similar disease of animals. ● *adjective* resembling or characteristic of typhus. □ **ty·phoid·al** /ˌtɔi'fɔidəl/ *adjective* [TYPHUS + -OID]

Typhoid Mary *noun* **1** a person who transmits a disease widely without showing its symptoms. **2** a transmitter of undesirable opinions, sentiments, etc. [nickname of *Mary* Mallon, Irish-born cook who transmitted typhoid fever in the US, d.1938]

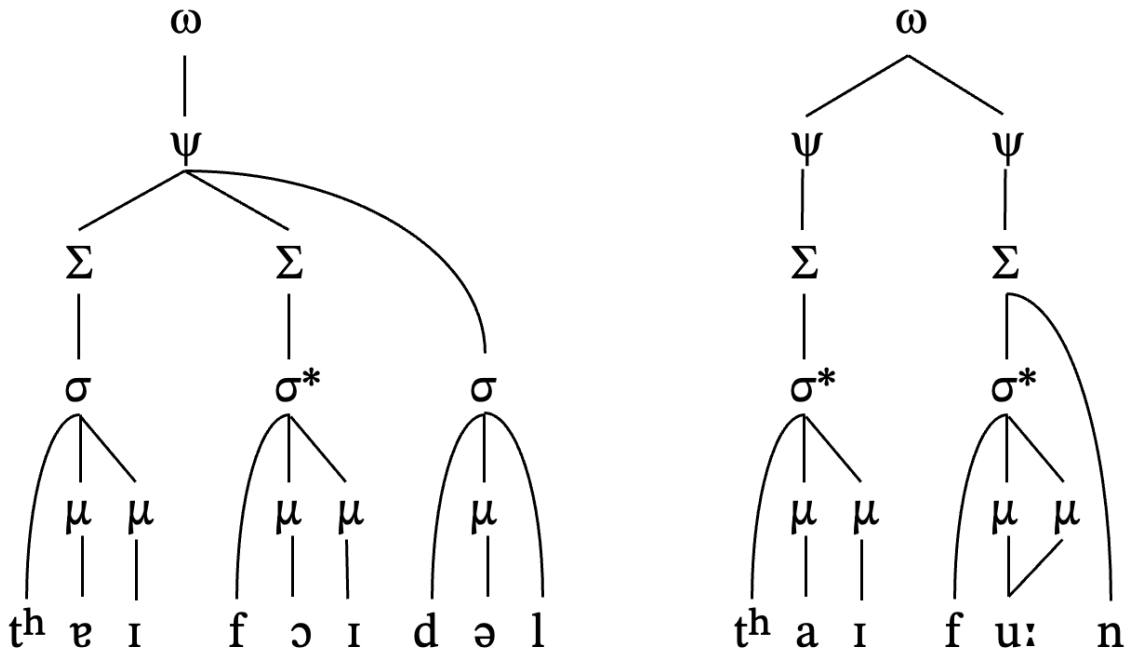
Ty·phon /'tɔifən/ *Gk Myth* a monster with 100 serpent heads, who was cast by Zeus into Tartarus, and who was held to be the source of winds which cause shipwreck and devastation.

ty·phoon /tai'fuːn/ *noun* a violent storm occurring in or around the

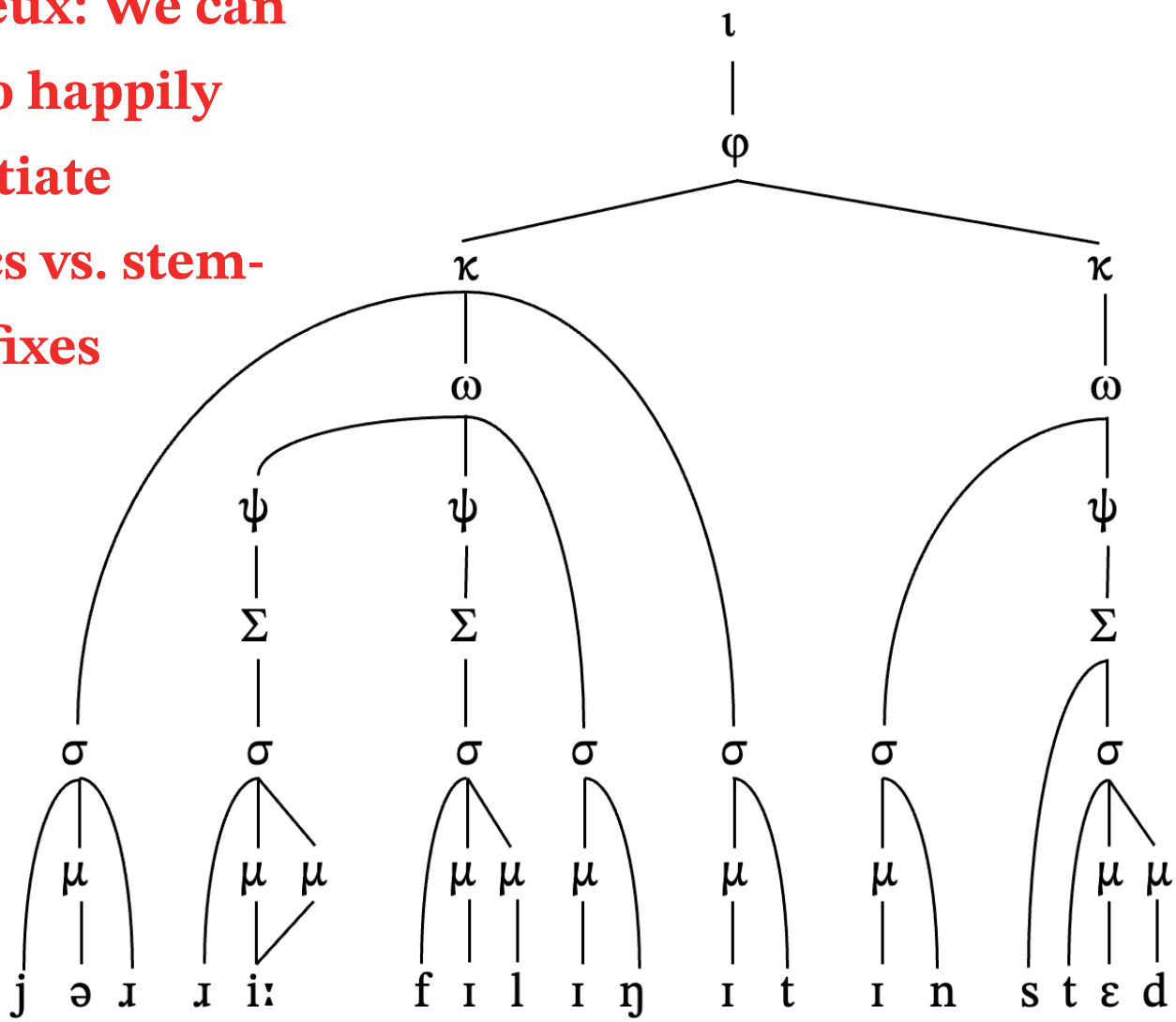
ty·coon /tai'kuːn/ *noun* **1** a business magnate. **2** *hist.* a title applied by foreigners to the shogun of Japan 1854–68. □ **ty·coon·ery** *noun* [Japanese *taikun* great lord, from Chinese *dà* great + *jūn* prince]

In spite of its stress/accent clash, the prosodic stem of *typhoidal* is preserved (cf. *typhoid*), so Canadian Raising applies normally.

The stress/accent clash in *typhoon* and *tycoon* is resolved by pseudocompounding, which blocks Canadian Raising.



Envoi deux: We can now also happily differentiate proclitics vs. stem-like prefixes



You're refilling it instead?