Tobias Scheer
Université de Nice, CNRS 6039
scheer@unice.fr

A BETTER SOLUTION FOR EXTRASYLLABICITY THAN EXTRASYLLABICITY

(1) in a nutshell
   a. why is there extrasyllabicity in phonological theory? Two and only two reasons:
      1. reason 1: **enforced underparsing**, too many consonants at word edges, syllabification algorithms break down.
      2. reason 2: **deliberate underparsing** in case word-final consonants do not behave as Codas [interestingly, no parallel for word-initial consonants].
   b. **overgeneration**: reason 1 sets up a mechanism that makes a wrong prediction: there could be sequences of any number of extrasyllabic consonants, i.e. #tplfkbrmkV… where #tplfkbrm is an extrasyllabic string. Needless to say, such a situation is not found in natural language. In actual fact, there does not seem to be a language where more than one consonant at a time is extrasyllabic. ==> case study of a language with a wild reputation: Polish.
   c. reason 2 is **theory-dependent**: what could a word-final consonant be if it is not a Coda? There is another candidate constituent that accommodates consonants: the Onset. However, classical syllabic theories based on Kahnian syllabification algorithms cannot even imagine that word-final consonants are Onsets, so by default they must stand astray. Government Phonology can imagine that they are Onsets, it actually claims that ALL word-final consonants are Onsets.
   d. on the other hand, there are two reasons why there can be no extrasyllabicity in Government Phonology:
      1. strings are fully syllabified in the lexicon; there is no syllabification algorithm.
      2. resyllabification is outlawed, hence nothing can stand astray at some derivational stage and "later" be readjoined to some constituent.
   e. **undergeneration**: however, Standard Government Phonology (Kaye et al. 1990, Kaye 1990) has a serious problem of empirical coverage: it is unable to accommodate both situations where word-final consonants show paired vs. impaired behaviour in regard of word-internal Codas. A wrong prediction is made to the effect that word-final consonants NEVER behave like word-internal Codas.
   f. purpose of this talk: to show that both the classical extrasyllabic solution and the undergenerating position of Standard Government Phonology fail for the same reason: they try to cover the parameter
       "word-final consonants show paired vs. impaired behaviour in regard of internal Codas"
       by contrasting arboreal structures: Coda vs. Onset vs. extrasyllabic.
       Standard Government Phonology undergenerates because syllable structure cannot be parameterised.[1]
   g. CVCV (Lowenstamm 1996) dispenses with syllabic arborescence altogether. Syllable-based processes are the result contrasting **lateral relations** that hold among segments. Syllabic arborescence cannot be parameterised, lateral relations can.
   h. CVCV offers an account for the "extrasyllabicity" that does not suffer from either the classical overgeneration nor the Standard Government Phonology undergeneration.

---

[1] Doing so, as suggested by Piggott (1991,1999), leaves us with something that does not look very much like Government Phonology anymore.

1. HOW EXTRASYLLABICITY WORKS: PROCEDURAL MECHANICS

(2) a. strings are unsyllabified in the lexicon.
   b. they are assigned syllable structure by a syllabification algorithm in the course of the phonological derivation.
   c. the algorithm underparses the string (either forced or deliberately) and leaves some consonants unsyllabified.
   d. regular phonological rules apply.
   e. somewhere at a later stage in the derivation, the stray consonants are reintegrated into the "prosodic hierarchy" by some Adjunction Rules. Common autosegmental background: no segment can have a phonetic existence if it is not attached to some constituent ("stray erasure").
   f. there are various opinions on the precise object to which extrasyllabic consonants are adjoined: syllabic constituents, the "prosodic word", the "phonological word", the foot etc.
      1. to syllabic constituents, e.g. German (Hall 1992:122ss)
         Jagd [jaakt] "hunt (noun)"
         Jagd-en [jaakd-ən] "hunts"
         the /–d/ is extrasyllabic, but undergoes final devoicing (=in Codas).
         Hence, it is adjoined to the Coda **before** final devoicing applies.
         Consequence: sonority sequencing is completely released "on the surface", i.e. anything and its reverse can be a branching Onset "on the surface". Hall (2000:248): sonority sequencing governs "deeper", but not phonetic representations.
      2. to the phonological word, e.g. Polish (Rubach & Booij 1990)
         kadr [katr] "strip from a film"
         kadrek [kadrɛk] "id., diminutive"
         thus /-d-/, /-r/ is transparent for final devoicing, i.e. is extrasyllabic.
         Consequence: there is no restriction on what the "phonological word" can dominate: anything and its reverse.
   g. how the notion of extrasyllabicity developed since the late 70s
      1. the notion of extrametricality is in phonology since Liberman & Prince (1977)
      2. it was extended to syllabic analysis by Clements & Keyser (1983) on French floating consonants
      3. extrasyllabic consonants
         - simply stand astray (e.g. Hall 1992, Wiese 1996)
         - are dominated by a constituent called "Appendix" (Halle & Vergnaud 1980, Kiparsky 1979)
         - are dominated by a constituent called "Termination" (Fudge 1969)

2. ENFORCED UNDERPARSING

(3) situations that give rise to extrasyllabic interpretations
   reason one at the left edge: enforced underparsing, too many consonants around[2]
   a. word-initial #RT-sequences (T=any obstruent, R=any sonorant)
      example: Czech rty "lips", lhát "to lie", etc.

---

[2] There is another case argued for in the literature on Polish (Rubach & Booij 1990, Rubach 1997 etc.): so-called trapped consonants. Example: the [r] in trwać "to last", the [n] in czosnku "garlic GENsg". This is problematic since there is a broad consensus that extra-X (-syllabic, -metrical, -pedal etc.) objects can only occur at edges of the respective units: see e.g. Roca (1994:213), Spencer (1996:246).

b.   cross-linguistic situation
IE languages on record: Slavic (massive), Greek (only #pt-, #kt-, #mn-)
non-IE languages: Modern Occidental Arabic (e.g. Moroccan Arabic) and Berber
Other languages with initial #RT-clusters exist, but their distribution over the globe
and according to genetic kinship appears to be erratic, cf. Clements (1990).

(4)   illustration
initial extrasyllabic consonants: Polish *rdza* [rd͡za] "rust"

stray after syllabification		in Appendix after syllabification	
after syllabification	surface adjoined to syllabic constituents	after syllabification	surface adjoined to syllabic constituents
σ / O N / # r d͡z a	σ / O N (branching) / # r d͡z a	σ / App O N / # r d͡z a	σ (branching) / App O N / # r d͡z a
	adjoined to the phonological word		adjoined to the phonological word
	m / σ / O N / # r d͡z a		m / App σ / O N / # r d͡z a
Rubach & Booij (1990)			

(5)   situations that give rise to extrasyllabic interpretations
reason one at the right edge: enforced underparsing, too many consonants around
a.   heavy word-final clusters
example: English sixths, German Herbst "autumn" etc.
b.   cross-linguistic situation
common, BUT
1.   a whole lot of these clusters are heteromorphemic, e.g. English:
six-th-s [sɪks-θ-s], no such monomorphemic final (nor internal) clusters
interpretation in Government Phonology: domain-final empty Nuclei,
[[[sɪksø]θø]sø]
2.   these clusters are restricted by some melodic property, e.g. German(ic), English:
"supernumerary" consonants are always dentals.

(6) illustration
final extrasyllabic consonants: German Herbst [hɛχpst] "autumn"

stray after syllabification		in Appendix after syllabification	
after syllabification	surface adjoined to syllabic constituents	after syllabification	surface adjoined to syllabic constituents
σ R O N C h e r b s t	σ R O N C h e r b s t	σ R O N C App h e r b s t Goldsmith (1990)[3]	σ R O N C App h e r b s t Hall (1992), Wiese (1996)
adjoined to the phonological word m σ R O N C h e r b s t Rubach & Booij (1990)			adjoined to the phonological word m σ R O N C App h e r b s t

3. DELIBERATE UNDERPARSING

(7) situations that give rise to extrasyllabic interpretations
reason two: deliberate underparsing, word-final consonants do not behave like Codas
a. absence of Coda-effect on word-final consonants themselves:
internal Codas react, but final Codas do not.
example: l-vocalisation in French.
compare with Brazilian Portuguese, where [ɫ] vocalises in both internal and final Codas.
b. absence of Coda-effect on the vowel preceding final consonants:
vowels in internal closed syllables react, but they remain untouched in final closed syllables.
example: Icelandic Closed Syllable Shortening.
compare with Czech, where vowels shorten in both internal and final closed syllables.

---

[3] Goldsmith (1990:135ss) operates with a kind of Appendix he calls "Ω", and which is converted into a syllable on its own by rule at some derivational stage.

Effects on Codas

(8)

Internal ≠ final Coda: French l-vocalisation (diachronic event)								
Onset						Coda		
#__		C__		V__V		__#		__C	
lamina	lame	plaga	plaie	vela	voile	sal	sel	alba	aube
levare	lever	flore	fleur	mula	mule	mel	miel	talpa	taupe
luna	lune	*implire	emplir	dolore	douleur	caball(u)	cheval	sol(i)dare	souder
lepore	lièvre	fab(u)la	fable	valere	valoir	fil(u)	fil	poll(i)ce	pouce

(9)

Internal = final Coda: Brazilian Portuguese l-vocalisation								
V__V			V__#			V__C		
Bras.	Europ.		Bras.	Europ.		Bras.	Europ.	
sa[ɫ]eiro	sa[ɫ]eiro	salt cellar	sa[w]	sa[ɫ]	salt (noun)	sa[w]-gar	sa[ɫ]-gar	to salt
ca[ɫ]adu	ca[ɫ]adu	who is silent	ca[w]	ca[ɫ]	lime	ca[w]sa	ca[ɫ]sa	trousers
ma[ɫ]a	ma[ɫ]a	suitcase	ma[w]	ma[ɫ]	badly	ma[w]-vado	ma[ɫ]-vado	nasty
mu[ɫ]a	mu[ɫ]a	mule	su[w]	su[ɫ]	South	su[w]co	su[ɫ]co	furrow
vi[ɫ]a	vi[ɫ]a	town	vi[w]	vi[ɫ]	mean	fi[w]tro	fi[ɫ]tro	filter

Effects on the vowel preceding Codas

(10) Internal ≠ final Coda
Icelandic (Gussmann 2001): Closed Syllable Shortening only in internal closed syllables

long VV		short V	
a. CVVCV	b. CVVTRV	c. CVVRTV	
staara	nɛɛpʰja	kampʏr	stara "stare", nepja "bad weather", kambur "comb"
luuða	pɛɛtʰrɪ	haulvʏr	lúða "halibut", betri "better", hálfur "half"
fai:rɪ	aapʰril	har̥ka	færi "opportunity", apríl "April", harka "severity"

(11)

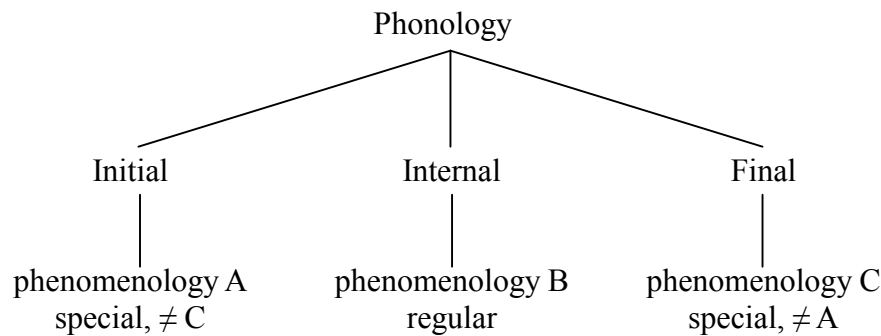| long VV			short V	
a. CVV#	b. CVVT#	c. CVVTR#	d. CVRT#	
puu	θaakʰ	pʰʏʏkʰr	sai͡l̥t	bú "estate", þak "roof", pukr "secretiveness", sælt "blessed neut."
tʰvɔɔ	hœi͡:s	sœœtʰr	pœlv	tvo "two, acc.masc.", haus "head", sötr "slumping", bölv "cursing"
fai͡:	kʰvœœl	snʏʏpʰr	kʰʏmr	fæ "I get", kvöl "torment", snupr "rebuking", kumr "bleating"
	prjɛɛv			bréf "letter"

(12) Internal = final Coda
Closed Syllable Shortening in both internal and final closed syllables

		open syllable __CV	closed syllable __C.CV	__C#	
a.	Turkish	meraak-ɨ	merak-tan	merak	curiosity NOMsg, poss., NOMpl
b.	Czech	kraav-a	krav-ka	krav	cow NOMsg, diminutive NOMsg, GENpl
c.	Classical Arabic	ʔa-quul-u	ta-qul-na	qul	say 1sg, 2pl fem, imperative 2sg

4. EXTRASYLLABICITY IS NOT ONE: INITIAL AND FINAL EXTRASYLLABIC CONSONANTS SHOW CONTRASTIVE BEHAVIOUR

(13) Rubach & Booij (1990) show that word-final extrasyllabic consonants (due to enforced underparsing) and their word-initial peers do not behave alike
- a. 1. teatr [tɛatr] – teatry [tɛatrɨ], hence /-t/
teatr wojenny [tɛadr vɔjɛnnɨ] "war theatre"
voice-assimilation affects the /t/ across 1) a word-boundary and 2) a word-final extrasyllabic consonant

But no such assimilation across word-initial extrasyllabic consonants:
- 2. no devoicing
pod mchem [pəd mxɛm] "under the nose"
od mszy [od mʃɨ] "since the mass"
- 3. no voicing
brak rdzy [brak r͡dzɨ]
- b. 1. degemination = deletion of extrasyllabic consonants, i.e. the second part of a geminate is extrasyllabic in Coda-position
flotylla [flɔtɨlla] "fleet NOMsg" - flotyll [flɔtɨl] "fleet GENpl"
Sybilla [sɨbilla] "sibilla" - Sybilski [sɨbilski] "sibilla, adjective"
hence: Sybil\<l\>-ski, flotyl\<l\>
- 2. no initial degemination of extrasyllabic consonants
ssać [ssat͡ɕ] "suck"
na czczo [t͡t͡ʃɔ] "on empty stomach"
dżdżysty [d͡ʒd͡ʒɨstɨ] "rainy"
- c. two possible conclusions
- 1. procedural: Rubach & Booij (1990)
two different adjunction rules that apply at different derivational levels
1. "Initial Adjunction" – early: before voice-assimilation and degemination
2. "Housekeeping Adjunction" – late: after voice-assimilation and degemination
- 2. representational:
"extrasyllabic" consonants at both word edges are special, but they are special in two different ways. That is, the identity of the beginning of the word and of the end of the word is not the same. "Extrasyllabic" consonants do not form a homogeneous class.
Or, in other words, it is a mirage to believe that there are two phonologies, regular (=internal) vs. extrasyllabic. There are three phonologies: regular (=internal) vs. initial vs. final.
Phonological theory is called to find out about the identity of the two locations that produce special phonologies.
1. initial: the phonological identity of the beginning of the word "#" is an empty CV unit (Lowenstamm 1999).
2. final: all consonant-final words end in an empty Nucleus. It is the special properties of this final empty Nucleus that cause the special final phonology. More on final "extrasyllabicity" below.

Phonology
```
                         Phonology
          ┌─────────────────┼─────────────────┐
       Initial           Internal            Final
          │                 │                  │
   phenomenology A    phenomenology B    phenomenology C
    special, ≠ C          regular          special, ≠ A
```

5. WHY IS THERE NO LANGUAGE WITH 7 OR 23 EXTRASYLLABIC CONSONANTS ?

(14) prediction made by extrasyllabicity
- a. in case of enforced underparsing, the algorithm leaves astray all consonants that cannot be parsed.
- b. in case of # rtV, [r] remains unparsed; in case of # rgtV, [rg] remain unparsed and so forth: there can be as many underparsed consonants as the lexicon submits, hence no restriction on their number.
- c. in order to be phonetically interpreted, extrasyllabic consonants are adjoined to some constituent at a later derivational stage.
- d. whatever the particular constituent chosen, it does not impose any restriction on the sonority slope or the number of consonants that it dominates.
  ==> there is no restriction on the number of extrasyllabic consonants.
  [e.g. Hall (2000:248): sonority sequencing governs "deeper", but not phonetic representations]
- e. sequences of three, five or eleven extrasyllabic consonants do not occur in natural language. For the left edge, it seems that the maximum number of extrasyllabic consonants is one.

(15) illustration of the latter statement:
  case study of one of the wildest extrasyllabic languages: Polish
- a. in two-membered initial clusters, one consonant at most can be extrasyllabic.
- b. the exhaustive list of three-membered initial clusters appears under (16) (following Rowicka 1999:309ss)
  interpretation:
  1. only stressable roots are considered, i.e. excluding roots with so-called trapped consonants, e.g. trwać "to last", which assimilate to syllabic consonants (Scheer 2003, forth)
  2. only monomorphemic initial clusters are considered.
  3. s+C sequences are notoriously odd lads. They count as one.
     "s" = [s,z,ś,ż,ʃ,ʒ]
     - #s+C clusters are not mentioned in table (16), they count as #C
     - #CsC clusters count as #CC
     etc.
- c. there are two four-membered initial clusters
  #pstr - *pstry*   "gaudy"   = p-TR
  #pstʃ - *pstrzyć*   "to mottle" = p-tʃ
- d. result:
  all three-membered clusters identify as "C + TR", i.e. one single extrasyllabic consonant plus a cluster of rising sonority.

(16)

three-membered monomorphemic word-initial consonant clusters in stressable Polish roots[4]							
final branching Onset				the second member is an s-sound			
		example	gloss			example	gloß
T-TL	tkl	tkliwy	tender	TsA	pʃt͡ʃ	pszczoła	bee
T-TF	tkv	tkwić	to stick		bʒd͡ʒ	bżdżenie	farting
T-TN	tkn	tknąć	to touch		bʒd͡ʑ	bżdzić	to fart
	tkɲ	tknięcie	touch	TsT	kʃt	kształt	form
T-FN	txn	tchnąć	to breathe		bzd	bzdura	nonsense
	txɲ	tchnienie	breath	TsG	gzw	gzło	cloth
	pxn	pchnąć	to push	FsT	xʃt	chrztu	baptism, GENsg
	pxɲ	pchnięcie	push		xʃt͡ʃ	chrzczony	baptised
T-FG	pxw	pchła	flea		xʃt͡ɕ	chrzcić	to baptise
T-FL	pxl	pchli	flea, adj.	NsA	mʃt͡ʃ	mszczenie się	vengeance
A-TN	t͡skɲ	cknić się	to miss		mɕt͡ɕ	mścić się	to avenge
	t͡skl	ckliwy	sickening	LsN	rʒɲ	rżniączka	cock's-foot
A-FN	t͡ʃxn	czchnąć	to scamper		lɕɲ	lśnić	to sparkle
(s)A-TG	(ʑ)d͡ʑbw	źdźbło	blade of grass				
N-TG	mdw	mdły	insipid				
	mgw	mgła	mist				
N-TL	mdl	mdleć	to faint				
	mgl	mglisty	misty				
N-TN	mkn	mknąć	to speed				
	mgɲ	mgnienie	twinkling				
L-TN	lgn	lgnąć	to cling				
F-TL	vbr	wbrew	against				

6. SUMMARY SO FAR

(17) we have seen that
   a. reason one: for initial extrasyllabicity, "too many consonants around" actually reduces to "one supernumerary consonant around".
   b. enforced underparsing (reason one) makes a wrong prediction: it allows for monster-sequences of extrasyllabic consonants.
   c. deliberate underparsing (reason two) is theory-dependent: we are sure that word-final consonants in some languages do not belong to Codas. A theory that can conceive of them belonging to Onsets does not need to go down the extrasyllabic road at all.

7. AN ALTERNATIVE: LATERAL RELATIONS INSTEAD OF SYLLABIC ARBORESCENCE

(18) Standard Government Phonology
   a. Standard Government Phonology (Kaye et al. 1990) is such a theory.
      Kaye (1990): word-final consonants are not only able to belong to Onsets, they ALWAYS do. This is due to Coda Licensing ["Codas need to be licensed by a following Onset. Since there is nothing following a word-final consonant, it must be an Onset.]

---

[4] The table is phonetic, which means that "rz" [ʃ/ʒ], which alternates with "r" [r], is considered as a fricative, not as a liquid. Abbreviations: T=stop, Fric=fricative, Aff=affricate, N=nasal, Liqu=liquid, Gl=glide.
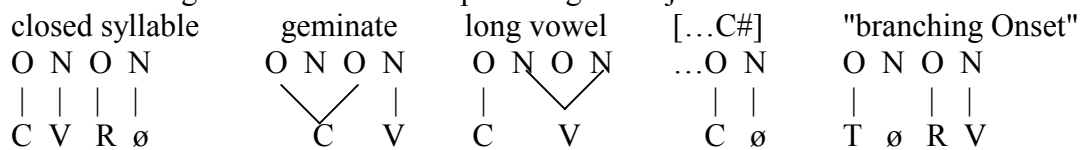
b. identity of word-internal Codas and word-final consonants

| word-internal Coda | word-final consonant |

```
   R        O                          R
   |\       |                          |
   N \      |                     O    N
   |  \     |                     |    |
   x   x    x                     x    x
   |   |    |                     |    |
   V   C    C                     C    ø
```

c. hence, the pattern whereby internal and final "Codas" show impaired behaviour is predicted: they do not have the same syllabic identity.

d. however, Coda Licensing cannot be parameterised: word-final consonants cannot be Onsets in some languages, but Codas in others.
Therefore, the reverse pattern, i.e. where both Codas behave alike, cannot be described.

(19) CVCV can
1. accommodate both patterns
2. without appealing to extrasyllabicity
   a. What is CVCV ?
      goal: the lateralisation of structure and causality in phonology.
      [Lowenstamm 1996, Scheer 1999, forth, Szigetvári 1999]
   b. syllabic constituency boils down to a strict consecution of non-branching Onsets and non-branching Nuclei. Some basic phonological objects:

| closed syllable | geminate | long vowel | […C#] | "branching Onset" |

```
O N O N        O N O N        O N O N       …O N        O N O N
| | | |         \ / |         |  \ /         | |         |   | |
C V R ø          C  V         C   V          C ø         T ø R V
```

   c. instead of being translated into the familiar arborescence, syllabic generalisations are described by two lateral relations:
      1. Government (destructive)
      2. Licensing (supporting)
      cf. Ségéral & Scheer (2001)
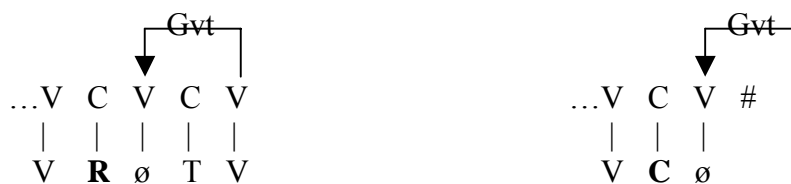   (R = any sonorant, T = any obstruent)
   d. **lateralisation of structure**:
      structure is exclusively defined in lateral terms.
      identity of the Coda: a consonant belongs to a Coda iff it occurs before a governed empty Nucleus.
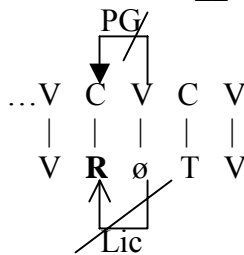
| internal Coda (boldfaced) | final Coda (boldfaced) |

```
        ┌──Gvt─┐                      ┌──Gvt──
        ▼      │                      ▼
…V   C   V   C   V            …V   C   V   #
 |   |   |   |   |             |   |   |
 V   R   ø   T   V             V   C   ø
```
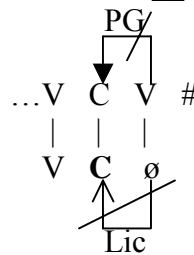
e. **lateralisation of causality**: the reason for the existence of syllable-related processes are lateral relations.
WHY are Codas weak? Because they are ungoverned and unlicensed, viz. the Coda Mirror (Ségéral & Scheer 2001).

internal Coda __.C

```
        PG
       ┌──┐/
       ▼  /│
...V  C  V  C  V
   |  |  |  |  |
   V  R  ø  T  V
      ↑__|
       /Lic
```

final Coda __#

```
        PG
       ┌──┐/
       ▼  /│
...V  C  V  #
   |  |  |
   V  C  ø
      |_/|
       /Lic
```

(20) the critical difference:
a. both classical models using extrasyllabicity and Standard Government Phonology define syllabic generalisations in terms of arboreal structure: a Coda and an Onset are different because they occupy different positions in the syllabic tree.

vs.

CVCV expresses the same generalisations by the presence vs. the absence of lateral relations: Coda = "consonant that occurs before a governed empty Nucleus" vs. Onset = "consonant that occurs before a filled (or an empty ungoverned) Nucleus."
b. syllabic trees cannot be parameterised, but lateral relations can.

(21) hence, the wavering behaviour of final Codas can be ascribed to the lateral actorship of final empty Nuclei (FEN):
a. effects on Codas
  1. languages where final Codas do react (= behave like internal Codas):
     FEN cannot license
  2. languages where final Codas do not react (= do not behave like internal Codas):
     FEN can license
b. effects on preceding vowels (= vowels in closed syllables)
  1. languages where vowels followed by final Codas do react (= behave like internal Codas):
     FEN cannot license
  2. languages where vowels followed by final Codas do not react (= do not behave like internal Codas):
     FEN can license

(22)   summary: there are four basic nuclear objects

	lateral actorship parametrised	Licensing	empirical consequences
full vowels	NO	always license	
FEN	YES	+ licence	final Coda ≠ internal Coda i.e. neither final Codas nor the preceding vowel react
		- licence	final Coda = internal Coda i.e. both final Codas and the preceding vowel react
schwa	YES	another time, cf. Rizzolo (forth), Scheer (2001, forth)	
internal empty Nuclei	NO	never license	

(23)   general comparison

		CVCV: FEN can license	mainstream: extrasyllabicity
Closed Syllable Shortening occurs	before both internal and final Codas	NO	OFF
	only before internal Codas	YES	ON
lenition occurs	in both internal and final Codas	NO	OFF
	only in internal Codas	YES	ON

(24)   conclusion
   a.   extrasyllabicity overgenerates monster-sequences of extrasyllabic consonants.
   b.   no word-final consonant needs to be extrasyllabic if theory can conceive of it belonging to an Onset.
   c.   Standard Government Phonology can. But it cannot express the parameter regarding the paired vs. impaired behaviour of internal and final Codas.
   d.   CVCV can do both: doing away with extrasyllabicity and accommodating both patterns. This is because of its very essence: the description of structure and causality by lateral, rather than by arboreal means.
   e.   we have seen how CVCV accounts for right-margin extrasyllabicity. But what about word-initial extrasyllabic consonants? Can CVCV avoid monster-sequences of extrasyllabic consonants? Yes: CVCV actually predicts that there can be one word-initial extrasyllabic consonant at most. More on this another time… (Scheer forth).

Refernces

Clements, George 1990. The role of the sonority cycle in core syllabification. Papers in Laboratory Phonology I, edited by J.Kingston & M.Beckmann, 283-333. Cambridge: Cambridge University Press.
Clements, George & Samuel Keyser 1983. CV Phonology. A Generative Theory of the Syllable. Cambridge, Mass.: MIT Press.
Fudge, Erik 1969. Syllables. Journal of Linguistics **5**, 253-286.
Goldsmith, John 1990. Autsegmental and Metrical Phonology. Oxford: Blackwell.

Gussmann, Edmund 2002. Phonology: Analysis and Theory. Cambridge: Cambridge University Press.

Hall, Tracy A. 1992. Syllable Structure and Syllable-Related Processes in German. Tübingen: Niemeyer.

Hall, Tracy A. 2000. Phonologie. Eine Einführung. Berlin & New York: de Gruyter.

Halle, Morris & Jean-Roger Vergnaud 1980. Three-dimensional phonology. Journal of Linguistic Research **1**, 83-105.

Kaye, Jonathan 1990. 'Coda' licensing. Phonology Yearbook **7**, 301-330.

Kaye, Jonathan, Jean Lowenstamm & Jean-Roger Vergnaud 1990. Constituent structure and government in phonology. Phonology Yearbook **7**, 193-231.

Kiparsky, Paul 1979. Metrical Structure Assignment is Cyclic. Linguistic Inquiry **10**, 421-441.

Liberman, Mark & Alan Prince 1977. On Stress and Linguistic Rhythm. Linguistic Inquiry **8**, 249-336.

Lowenstamm, Jean 1996. CV as the only syllable type. Current trends in Phonology. Models and Methods, edited by Jacques Durand & Bernard Laks, 419-441. Salford, Manchester: ESRI.

Lowenstamm, Jean 1999. The beginning of the word. Phonologica 1996, edited by John Rennison & Klaus Kühnhammer, 153-166. La Hague: Holland Academic Graphics.

Piggott, Glyne 1991. Apocope and the licensing of empty-headed syllables. The Linguistic Review **8**, 287-318.

Piggott, Glyne 1999. At the right edge of words. The Linguistic Review **16**, 143–185.

Rizzolo, Olivier 2002. Du leurre phonétique des voyelles moyennes en français et du divorce entre Licenciement et Licenciement pour gouverner. Ph.D dissertation, Université de Nice.

Roca, Iggy 1994. Generative Phonology. London: Routledge.

Rowicka, Graz'''yna 1999. On Ghost vowels. A Strict CV Approach. Ph.D. dissertation, Leiden University.

Rubach, Jerzy 1997. Extrasyllabic Consonants in Polish: Derivational Optimality Theory. Derivations and Constraints in Phonology, edited by Iggy Roca, 551-581. Oxford: Clarendon.

Rubach, Jerzy & Geert Booij 1990. Edge of constituent effects in Polish. Natural Language and Linguistic Theory **8**, 427-463.

Scheer, Tobias 1999. A theory of consonantal interaction. Folia Linguistica **32**, 201-237. Downloadable at http://www.unice.fr/dsl/tobias.htm.

Scheer, Tobias 2001. A propos de la vie des yers en slave et en français. Travaux du Cercle de Linguistique de Nice **20**, 143-230. English version downloadable at http://www.unice.fr/dsl/tobias.htm.

Scheer, Tobias 2003. Syllabic and trapped consonants (in Slavic): different but still the same. Talk presented at the 5e Colloque du GDR 1954, 2-4 June 2003, Montpellier. Handout downloadable at www.unice.fr/dsl/tobias.htm.

Scheer, Tobias forth. A Syntagmatic Theory of Phonology. Ms, University of Nice.

Ségéral, Philippe & Tobias Scheer 2001. La Coda-Miroir. Bulletin de la Société de Linguistique de Paris **96**, 107-152. Older English version downloadable at http://www.unice.fr/dsl/tobias.htm.

Spencer, Andrew 1996. Phonology. Oxford: Blackwell.

Szigetvári, Péter 1999. VC Phonology: a theory of consonant lenition and phonotactics. Ph.D dissertation. Eötvös Loránd University, Budapest. Downloadable at http://seas3.elte.hu/szigetva/papers.html.

Wiese, Richard 1996. The Phonology of German. Oxford: Oxford University Press.