Vowel - zero alternations

A. Moroccan Arabic (Kaye (1990a))

(1)

MA	Classical Arabic	
køt$_{ɨ}$b-ø	katab-a	"he writes"
k$_{ɨ}$tøb-u	katab-uu	"they write"
k$_{ɨ}$tt$_{ɨ}$b-ø	kattab-a	"he causes to write"

(2)

evolution CA > MA
there was no [$_{ɨ}$] in CA
V > $_{ɨ}$ in non-final position, V > ø /__#
VV > V

B. Tangale (Chadic) (Nikiema (1989))

(3)

tana	"cow"
/tana+do/ ——> tanø-do	"your cow"
dobe	"call"
/dobe+no+go/ ——> dobu-nø-go	"called me"
/sugde+zi+go/ ——> sugdu-zø-go	"pierced you"

C. Germanic

(4)

High Germanic variety: German

inner-ø	"inner"
inner-es	"inner+infl."
or innør-es	
inner-lich	"internal"
ver-inner-te	"internalized"
trocken	"dry"
trockener	"dry comp."
trockeneren	"dry comp.pl."

(5)

evolution OHG (Old-High German) > MHG,NHG (Middle-..., New--...)there was no [ə] in OHG

any unstressed vowel becomes schwa in MHG and NHG, it disappears in certain positions in NHG

	OHG	MHG	NHG	
1	nim-u	nim-e	neem-ə	"take"
2	nim-is	nim-est	nim-st	
3	nim-it	nim-et	nim-t	(but falt-ət)
4	nem-eem	nem-en	neem-ən	
5	nem-et	nem-et	neem-t	(but falt-ət)
6	nem-ant	nem-ent	neem-ən	

(6)

vowel-reduction has sometimes reached zero:

MHG genade > NHG Gnade "mercy"

MHG gelaube > NHG Glaube "belief, religion"

obligatory zero is typical for nouns:

verb	noun	
satt$_{ə}$l-n < satt$_{ə}$l-$_{ə}$n	Sattøl-er	"saddle,saddler"
bumm$_{ə}$l-n < bumm$_{ə}$l-$_{ə}$n	Bummøl-er	"stroll,stroller"

(7)

Low Germanic varieties: Dutch and Colone German

a. Dutch (Oostendorp (1995))

very correct		informal	
help		hel$_{ə}$p	"help"
kerk		ker$_{ə}$k	"church"

b. Colone German

		sel$_{ə}$vs	"self"
		fün$_{ə}$ftens	"fifth"
fünf	as well as	fün$_{ə}$f	"five"

but

fünf$_{ə}$	*fün$_{ə}$f$_{ə}$	"five"
Film	Fil$_{ə}$m	"film"

but

Film$_{ə}$	*Fil$_{ə}$m$_{ə}$	"films"

D. French I (e.g. Quebec) (Dell (1973), Encrevé (1988), Charette (1990))

(8)

a.			
rev$_{ə}$nir	or	revønir	"come back"
le r$_{ə}$pas	or	le røpas	"the meal"
la s$_{ə}$maine	or	la sømaine	"the week"
b.			
la r$_{ə}$prise		*la røprise	"the takeover"
la r$_{ə}$traite		*la røtraite	"the pension"
le s$_{ə}$cret		*le søcret	"the secret"
le d$_{ə}$gré		*le døgré	"the degree"
c.			
ouvert$_{ə}$ment		*ouvertøment	"overtly"
fort$_{ə}$resse		*fortøresse	"fortress"
d.			
tendr$_{ə}$té		*tendrøté	"tenderness"
mercr$_{ə}$di		*mercrødi	"wendsday"
siffl$_{ə}$ment		*siffløment	"whistle"
cr$_{ə}$ver		*crøver	"die"

(9)

evolution Latin > French
there was no [$_{ə}$] in Latin
fr [$_{ə}$] < old fr [$_{ə}$] < lat unstressed [a]
e.g.

lat	fr	
ornaméntu	orn$_{ə}$mént	"ornament"
cámera	chámbr$_{ə}$	"room"

in some cases, old fr [$_{ə}$] disappears

lat	old fr	fr	
cántas	ʃant$_{ə}$s	ʃãt	"sing 2.sg"

E. Slavic languages (e.g. Czech I)

(10)

NOMsg	GENsg	GENpl	adj	
a.				
pes	pøs-a			"dog"
mozek	mozøk-u			"brain"
b.				
šev	šøv-e			"seam"
šøv-ec	šev-øc-e			"shoemaker"
c.				
holk-a		holek-ø		"girl"
letadl-o		letadel-ø		"plane"
d.				
hudb-a		hudeb-ø	hudeb-ní	"music,musical"
loket-ø	lokøt-e		loket-ní	"elbow"

e.

Name of a man	Name of his wife or daughter	
	ok	*
Pátr**e**k	Pátr**e**ková	*Pátr**ø**ková
Davídp**e**k	Davídp**e**ková	*Davídp**ø**ková
Pát**e**k	Pát**ø**ková	*Pát**e**ková
Davíd**e**k	Davíd**ø**ková	*Davíd**e**ková

f.

NOMsg	GENsg	
Kadl-ec	Kadl-ec-e	last name
	*Kadl-øc-e	

(11)

"vowels that alternate with zero in modern slavic languages are reflexes of the jers "ь,ъ", which themselves come from IE short [i] > psl ь and short [u] > psl ъ"

(12)

comparatistic evidence for psl ь,ъ < IE i,u[1]

ь: psl *v$_{ь}$dova lat vidua, ger Witwe

ъ: psl *d$_{ъ}$va lat duo, engl two

[1] – more: e.g. Vondrák (1906,136ss), Panzer (1991,276).

(13)

different reflexes of the two jers in slavic languages (psl *pęt$_{ъ}$k$_{ъ}$, s$_{ъ}$n$_{ъ}$, or$_{ь}$l$_{ъ}$, d$_{ь}$n$_{ь}$, l$_{ь}$v$_{ъ}$ mean "friday, dream, eagle, day, wolf"):[2]

		ъ	ь
	ъ ь	p•t$_{ъ}$k$_{ъ}$, s$_{ъ}$n$_{ъ}$	or$_{ь}$l$_{ъ}$, d$_{ь}$n$_{ь}$, l$_{ь}$v$_{ъ}$
cz/slov	e-e	pátek, sen	orel, den, lev
pol	e-ie (ie=e+PAL)	pitek, sen	orzeł, dzie•,lew
sorb	o-e	son	d•e•/•é•
rus	o-e	pjatok$_{ъ}$,son$_{ъ}$	orël$_{ъ}$, den$_{ь}$, lev$_{ъ}$
bul	ъ/e-ъ (ъ=central)	pet$_{ъ}$k, s$_{ъ}$n	orel, den, l$_{ъ}$v
serb-cr	a-a	petak, san	orao, dan, lav
sloven	ə-ə/a (a=long)	pet$_{ə}$k, s$_{ə}$n	or$_{ə}$l, dan, l$_{ə}$v

(14)

evolution of the jers:

a. late psl jers are high, ultrashort and slightly centralized vowels

b. centralization

   1. they evolve to a central articulation and become one
   2. they evolve to a central articulation but maintain a palatality-velarity opposition

c. vocalization

   in "strong" positions, a vowel (mostly non-central) appears at the place of the jer. In "weak" positions, jers disappear without a trace.

   "strong" positions: C_CCV
   C_C#

   "weak" positions: C_CV
   C_#

   In languages that have kept a palatality-velarity opposition, a front vowel replaces ь, and a back or central vowel ъ in "strong" positions.

[2] – see e.g. Gebauer (1894,57), Panzer (1991,277), Vondrák (1906,153ss), Arumaa (1964,57,61s), Lamprecht/Šlosar/Bauer (1986,49s).

(15)

sequences of several jers: Havlík's law (Czech)

```
sъ šьvьcьmь   >   s ševcem      sъ pьsъmь   >   se psem
 5  4 3 2 1          4  2       4  3 2 1         4  2

  "with the shoemaker"            "with the dog"
```

(16)

watch out, (11) is a legend. There are a lot of cases where alternating vowels do not go back to jers.

some examples of Czech alternating [ɛ] originating in nothing:

a. feminine **-i**-stems provided with the suffix psl -sn- and the NOMsg case-marker psl -ь:
   NOMsg *pís<u>e</u>ň-<u>ø</u>* - GENsg *písn-ě* < NOMsg psl *pě-snь
   NOMsg *bás<u>e</u>ň-<u>ø</u>* - GENsg *básn-ě* < NOMsg psl *ba-snь < IE bhā

b. neuter **-o**-stems and feminine **-a**-stems provided with the case marker psl GENpl -ъ
   GENpl *čís<u>e</u>l-<u>ø</u>* - NOMsg *čísl-o* < NOMsg psl *čit-sl-o
   < IE keit vs. GENpl psl *čit-sl-ъ
   GENpl *ses<u>t</u><u>e</u>r-<u>ø</u>* - NOMsg *sestr-a* < GENpl psl *sestrъ

c. a little group of masculine **-o**-stems provided with the case marker psl NOMsg -ъ:
   NOMsg *moz<u>e</u>k-<u>ø</u>* - GENsg *mozk-u* < stsl NOMsg mozgъ

d. some prepositions and prefixes:

vz(e) < vъz	vze-pnout se	vs.	vz-pínat se
roz(e) < roz	roze-dmout	vs.	roz-dmýchat
bez(e) < bez	beze-dný	vs.	bez-květný
z(e) < jьz	ze-ptat	vs.	z-tratit
ot(e)/od(e) < ot	ote-vřit	vs.	ot-vírat

F. Summary

(17)

generalisations: in order to get a zero,

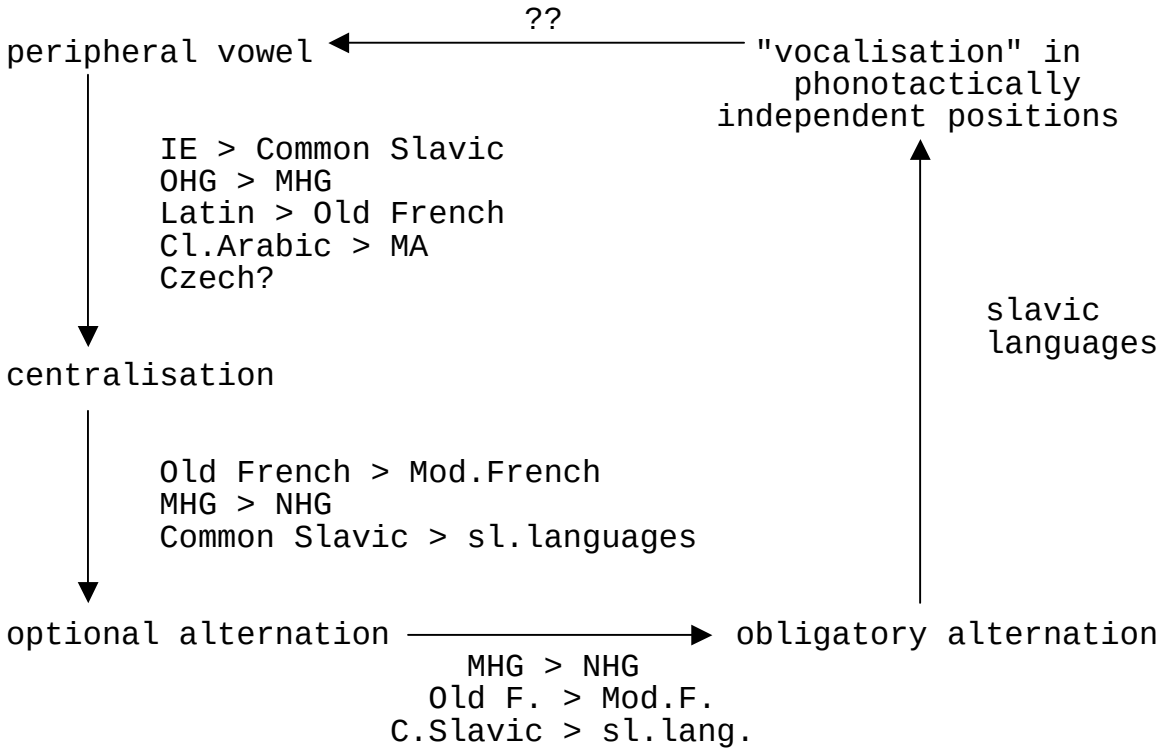
a. there must be a vowel in the right context of the alternation-site. This vowel triggers the alternation:
   vC-ø but øC-V
   AND
b. the triggering vowel mustn't be separated from the alternation-site by more than one consonant:
   øC-V but vCC-V
   AND
c. the alternating vowel mustn't be preceded by mor than one consonant
   CøC-V but CCvC-V

(18)

diachronic generalisations:

a. vowels alternating with zero mostly are central ones.
b. in any language where historical data are available, vowels that alternate with zero go back to non-central vowels.
c. in any language where historical data are available, vowels start to alternate when they become central.
d. hypothesis 1: any non-central vowel that alternates with zero is a reflex of a central vowel. Centrality is a necessary condition in order for a vowel to start to alternate with zero.
e. hypothesis 2: zero-forms are first optional realisations, then become obligatory.

f.



g. will there be a vocalisation of the different schwas in MA, German and French at some time?

(19)

language-specific features:

a. obligatory (Moroccan Arabic, Tangale, slavic languages (German)) vs. optional (German, French I) relisation of the zero-forms

b. the vowel(s) alternating with zero:

Moroccan Arabic	[ɨ]
German, French	[ə]
Tangale	[u,a]
Srb-cro	[a]
Pol/Cze/Slov	[ɛ]
Sloven	[ə,a]
Russian	[e,o]
Bulgarian	[e,ə]

G. Questions/ Problems

(20)

is the underlying vowel lexically present or epenthetic?

(21)

the temptation to capture the generalisations by a cross-linguistic mechanism is very strong. Such a mechanism thus may not refer to language-specific features.

(22)

a. in Moroccan Arabic, ANY [i̞] might alternate. In German and French, ANY [ə] might alternate.
b. in Tangale, there are [a]s and [u]s that never alternate. In slavic languages, e.g. Czech, there are [ɛ]s that never alternate:

NOMsg	GENsg
pes	pøs-a= come from jers or nothing
les	les-a= come from a psl [e]

How can this diachronic contrast be dealt with synchronically?

H. Proposals

(23)

"a vowel is inserted because otherwise a consonant cluster obtains that

1. violates well-formedness constraints applying to syllable structure (e.g. Wiese (1988), Noske (1992)) or
2. is not optimal in a given constraint-ranking (e.g. Oostendorp (1995))"

"in case of a vocalic support on the right hand of the alternation site, resyllabification takes place in such a way that there is no illegal cluster anymore"

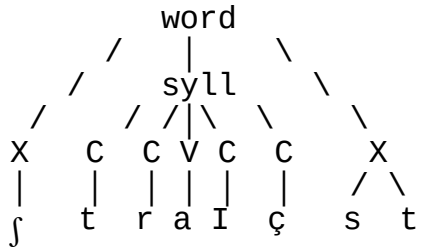
(24)

Wiese (1988,86,ss)
syllabification-algorythm:
a. associate V with a local sonority-peak
b. associate to the left of this V as far as you can
c. associate to the right of this V as far as you can

(25)

extrasyllabicity: ante- and postsyllabic appendices
antesyllabic appendices can be hosted by [ ] and [s] only
postsyllabic appendices can be hosted by [t], [s] and [st] only

e.g.



streichst

(26)

	+ə	-ə	underlying
a.	At$_{ə}$m	b. Atmung	c. aatm
	Seg$_{ə}$l	Segler	zeegl
	trock$_{ə}$n	Trockner	tR$_{ɔ}$kn
	dunk$_{ə}$l	dunkle	dUnkl
	nied$_{ə}$r	niedrig	niidR
	Himm$_{ə}$l	Himmlisch	hIml

(27)

schwa-epenthesis rule
ø ⟶ V / __X]$_{word}$
then associate empty V with a schwa

(28)

schwa is inserted because the last consonant of the underlying forms in (26c) otherwise would remain unsyllabified.

(29)

Noske (1992,32)
syllable assignment

a. the string of segments is scanned for nonsyllabified segments from left to right or right to left (language-specific parameter)
b. a canonical syllable (i.e. Onset, Nucleus, Coda) is is onto the string of segments every time a non-syllabified segment is detected.
c. optimal linking along sonority-criteria takes place.
d. the whole process is repeated until no non-syllabified segments are left anymore.

(30)

a. this kind of approach necessarily makes reference to language-specific wellformedness-constraints or constraint hierarchies.
b. in other languages such as Czech, forms lacking the alternating vowel are often well-formed:

NOMsg	GENsg	
kel	køl-u	"tusk"

*kl would be well-formed

masc.sg	fem.sg	
šel	søl-a	"went"

*šl would be well-formed

(31)

KLV (1987): Government

a. Government is an asymmetrical relation between two linguistic units where the governor influences the governee.
b. only "stronger" units can govern "weaker" ones. "Strong" and "weak" are lexical properties of the segments: CHARM.
c. Charm (cf.KLV (1985,1987)), roughly: consonants: obstruants are negatively charmed, sonorants are neutral with respect to Charm; vowels: low vowels are positively charmed, high vowels neutrally.
   A government can hold only within a relation where the governor is charmed and the governee charmless.

(32)

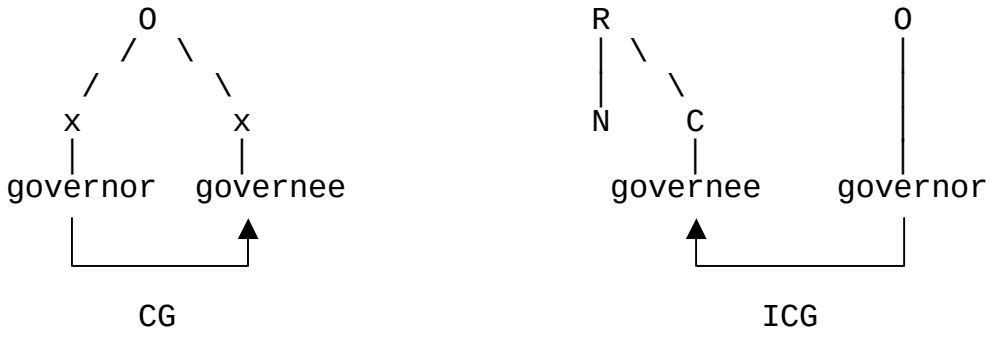
Co-occurrence-constraints:

a. within a branching Onset, the second element is restricted
b. in a Coda-Onset sequence, the first element is restricted
c. interpretation: the restricted element is a governee. It is restricted to sonorous segments because otherwise the governor would not be able to impose his government.

(33)

two kinds of governing-domains:

a. right-headed (branching Onsets): **Constituent Government**
b. left-headed (Coda-Onset): **Interconstituent Government**



c. CG and ICG are 1.strictly local, 2.strictly directional.

(34)

proposal by KLV (1987); (cf. Kaye (1990b), Charette (1990))
describing a particular kind of internuclear government:

a. the governee is central, thus "weak" and charmless,
b. it undergoes the influence of any available governor.

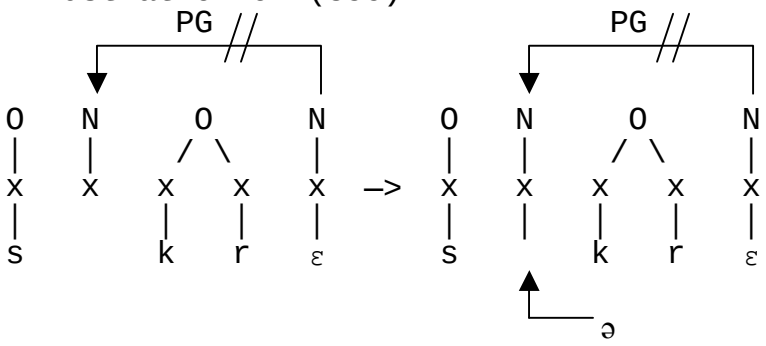
(35)

Proper Government (PG)

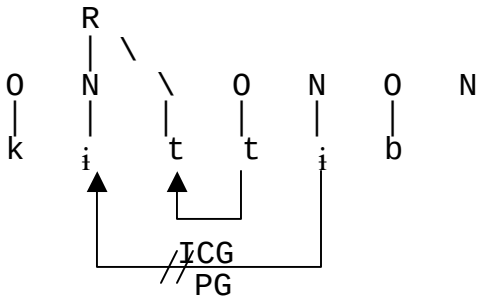
a. a Nucleus may not be expressed if it is governed by a vowel to its right.
b. a properly governed Nucleus cannot itself govern
c. PG cannot apply over governing domains.
   governing domains are
   1. branching Onsets = Constituent Government (CG)
   2. Coda-Onset clusters = Interconstituent Government (ICG)
d. PG applies to empty Nuclei. Empty Nuclei escaping PG are subject to a language-specific epenthesis.

(36)

illustration of (35c):



language-specific epenthesis applying
to empty Nuclei escaping PG



kɨttɨb "he causes to write"

(37)

Empty Category Principle (cf.KLV (1987)):
the existence of empty categories is conditioned by phonological operations. E.g., the availability of a proper governor (or other phonological operations to be defined).

(38)

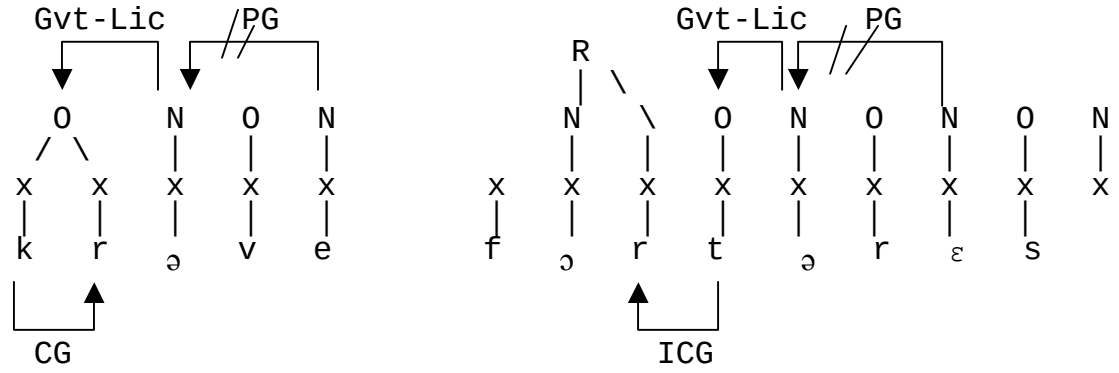
consequence: at least the syllabic structure that hosts the alternating vowel is lexically present and non-epenthetic.

(39)

proposal by Charette (1990) relative to (17c) ("in order to get a zero, the alternating vowel mustn't be preceded by more than one consonant"):
Government Licensing
in order for a consonantal Head to be able to exert a government, it must be Government-Licensed by a vowel to its right.

(40)

illustration of Government-Licensing: [ ] cannot disappear because it has a job to do: it must government-licence the Head of the preceding cluster.



crever "die" *forteresse* "fortress"

I. Evaluation of the Government-approach

(41)

a. no reference to language-specific parameters
b. Government-Licensing being explanatory, PG is mainly descriptive: WHY do intervening governing domains block PG?
c. it encodes more general properties of internuclear relations conditioned by intervening consonant clusters: cf. Italian infra.
d. undesirable sequentiality: PG operates first, then epenthesis concerns the escaping empty Nuclei.

J. Benefits

(42)

there are no two sources of vowel-zero alternations in slavic languages (i.e. jers and nothing):

Empty Nuclei escaping PG were subject to an epenthesis.

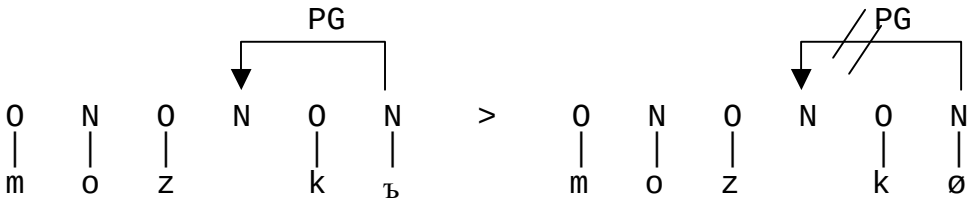
the concerned Nuclei were

a. empty since ever (píseň, mozek, sester,...)
b. emptied by the progessive weakening/ centralisation of IE [i,u]=jers.

"vocalisation"=epenthesis did not concern the jers but what they left behind, i.e. empty Nuclei.

(43)

given PG and ECP, two possible scenarios in the case of an empty Nucleus losing its proper governor diachronically:



a. epenthesis
b. going against the general evolution, the proper governor does not disappear

(44)

a. epenthesis is illustrated by Czech mozek, studentek etc.
b. maintain of the vowel that normally is expected to disappear: Latin > French

All latin final vowels but [a] disappear in French. Unstressed [a] becomes [ə] in Old French and (mostly) ø in Modern French.

lat	Old French	Mod.Fr.	
Dīe	...ø	(mi)diø	e>ø
nave	...ø	nefø	e>ø
heri	...ø	hierø	i>ø
perdo	...ø	perds	o>ø
muru	...ø	murø	u>ø
caballu	...ø	chevalø	u>ø
via	voiə	voaø	
mūla	mulə	mulø	
porta	portə	portø	
alba	aubə	aubø	
fēmina	femmə	femmø	
auricula	oreillə	oreillø	
harpa	harpə	harpø	

adjective-paradigms

		latin (romance)	
		sing	pl
masc	subject	nativus	nativi
	object	nativo	nativos
fem		nativa	nativas

		Old French sing	pl
masc	subject	naïs	naïf
	object	naïf	naïs
fem		naïv$_{ə}$	naïv$_{ə}$s

Exceptions: words ending in a branching Onset -CC:

camera		chambr$_{ə}$
suspende$_1$re$_2$	suspendør$_{ə}$	suspendør$_{ə}$
vende$_1$re$_2$	vendør$_{ə}$	vendør$_{ə}$

exceptions:

1. -a > $_{ə}$ regularly, but [$_{ə}$] didn't disappear in Mod.Fr.
2. -e$_2$ > $_{ə}$ and not, as expected, > ø. -e$_1$- > regularly ø.

(45)

Italian tonic lengthening (analysis by Larsen (1995))

long vowels in stressed syllables before C and branching Onsets, short ones before Coda-Onset sequences:

fáato	"destiny"	VV/__CV
píigro	"lazy"	VV/__C$_{-son}$C$_{+son}$V
párko	"park"	V/__C$_{+son}$C$_{-son}$V
virtú	"virtue"	V/__#
blú	"blue"	V/__#

K. Summary

(46)

a. Latin > French and Italian obviously are instances of internuclear relations.
b. the intervening consonant cluster is crucial for the communicating vowels.
c. it is tempting to look for a generalisable description, say, "intervening consonant clusters inhibit internuclear communication".
d. the different action of the head of the domain must be defined: "killing" in the case of PG, "reinforcing" in Italian.
e. Latin > French and Italian obviously treat branching Onsets and Coda-Onset sequences in different ways. This goes against "intervening governing domains inhibit internuclear communication"

L. Intervening CCs that do not block

(47)

French II			
la r$_{ə}$prise	as well as	la røprise	__$C_{-son}C_{+son}$V
le s$_{ə}$cret		le søcret	--
le d$_{ə}$gré		le døgré	--
fort$_{ə}$resse		fortøresse	$C_{+son}C_{-son}$__
forg$_{ə}$ron		forgøron	--
vers$_{ə}$ment		versøment	--
autr$_{ə}$ment	out ——>	*autrøment	$C_{-son}C_{+son}$__
siffl$_{ə}$ment		*siffløment	--
tendr$_{ə}$té		*tendrøté	--

(48)

a. there are no [$_{ə}C_{+son}C_{-son}$V] in French.
b. in ANY french sequence [$C_{+son}C_{-son}{}_{ə}C_1$V], C_1 is a sonorant (with a handfull of exceptions like *percevoir*; all of them are [$_{ə}$Cs__C_{-son}])

(49)

a. intervening branching Onsets don't inhibit internuclear communication in this case.

b. branching Onsets and Coda-Onset sequences don't behave alike.

(50)

Czech II: vowel-zero alternations in Czech prefixes

+e	-e	
bez**e**-dný	bez**ø**-květný	"without bottom/ without flowers"
vz**e**-dmout	vz**ø**-hled	"blow up/ expression (face)"
před**e**-vším	před**ø**-skok	"before all/ test-jump"
roz**e**-dmout	roz**ø**-dmýchat	"blow up/ fan"
roz**e**-přít	roz**ø**-přahat	"strut/ remove"

(51) conditions: alternations occur only if

a. the stem begins with at least two consonants: prefix-√CCV

b. the prefix is consonant-final: ...C-stem

e.g. prefix *po-*: *po**e**-* never occurs

(52)

numeric survey
(exhaustive data from Ulbrich (1978))

prefix	+e	-e
bez	16	39
vz	11	20
před	16	48
roz	80	295
nad	5	33
pod	26	74
od	41	253
sum	195	762
TOTAL	957	

(53) pf=perfective, ipf=imperfective, pap=past active participle

	two words of the same stem				non-related stem
√CC-	a.		b.		c.
√BR-	ode-brat	pf	od-b**í**rat	ipf	bez-bradý
√DR-	roze-drat	inf	roz-d**e**ru	1°sg	roz-drobit
√HR-	pře**e**de-hra	noun NOMsg	h**e**r	noun GENpl	od-hrabat
√ML-	roze-mlít	pf	roze-m**í**lat	ipf	před-mluva
√PR-	ode-prat	inf	od-p**e**ru	1°sg	vz-pruha
√SN-	beze-sný	adj	s**e**n	noun NOM sg	pod-sněžník
√ŠL-	vze-šlý	adj	š**e**l	pap masc sg	roz-šlapat
√ZD-	pode-zdít	inf	z**e**ď	noun NOM sg	od-zdola
√DN-	beze-dný	adj	d**e**n	noun GEN pl	-

(54)

Who is who in the stem?

	C_2 is stem-final		C_2 is stem-initial
[√C_1C_2-]	=/C__C/		=/CC__/
√BR-	ode-B__R-at	vs.	bez-BRaD-ý
√DR-	roze-D_-r-at	vs.	roz-DRoB-it
√HR-	pře**e**de-H__R-a	vs.	od-HRaB-at
√ML-	roze-M__L-ít	vs.	před-MLuV-a
√PR-	ode-P__R-at	vs.	vz-PRuH-a
√SN-	beze-S__N-ý	vs.	pod-SNěŽ-ník
√ŠL-	vze-Š__L-ý	vs.	roz-ŠLaP-at
√ZD-	pode-Z__D-ít	vs.	od-ZDoL-a
√DN-	beze-D__N-ý		-

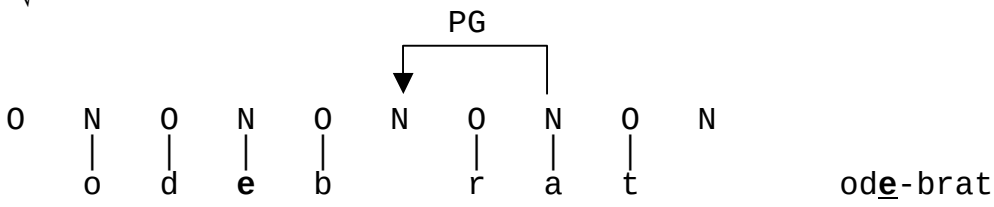
(55)

distributional solution: the alternation is conditioned by the structure of the stem ("__"=position where a vowel can be observed):

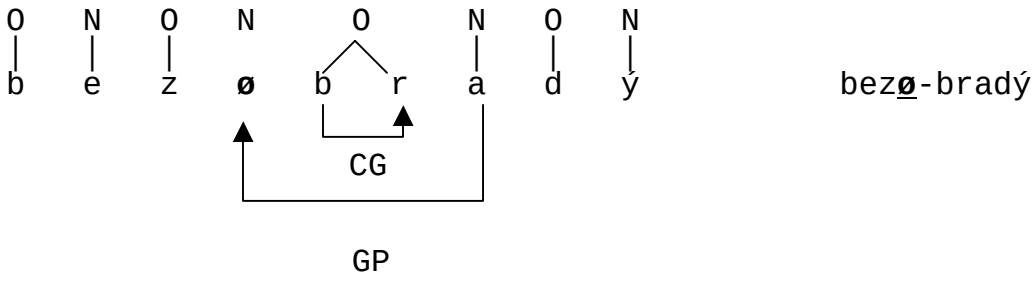
both Cs are stem-initial	√C_1C_2___	==>	-e
C_1 is stem-initial, C_2 is stem-final, both enclose a zero	√C_1___C_2	==>	+e

(56)

a. √BøR



b. √BRaD



M. Alternative proposal

(57)

a. "intervening governing domains block PG" is too strong.

b. intervening branching Onsets sometimes do, sometimes do not:

block	don't block	both Cs belong to
Tangale		different morphemes
Czech I		different morphemes
Moroccan Arabic		different morphemes
German		different morphemes
French I	French II	the same morpheme
	Czech II	the same morpheme

c. the solution thus is likely to be found in the relation both Cs contract.

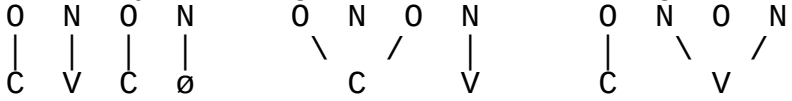
(58)

CVCV (cf. Lowenstamm (1995)):

a. syllabic structure is a strict consecution of non-branching Onsets and non-branching Nuclei.

b. no branching constituents, no Codas.

c. closed syllable geminate long vowel

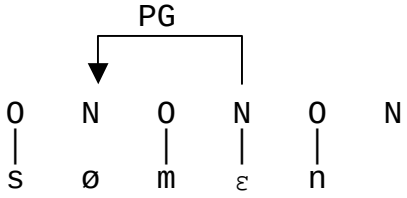


d. closed syllable phenomena are triggered by the presence of an empty Nucleus. E.g. final devoicing (cf.Brockhaus (1992)) or deaspiration in Corean occur iff a concerned consonant comes to stand before an empty Nucleus that is unable to license it.

(59)

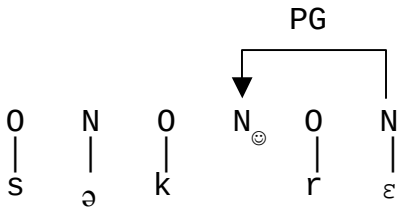
review of the different cases

a. PG applies to the potentional alternation-site



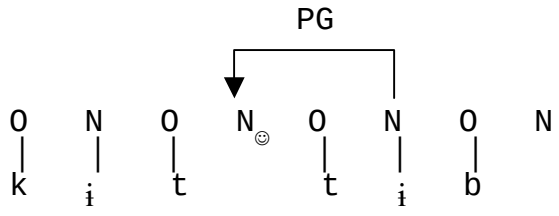
semaine "week"

b. PG does not apply to the potential alternation-site **BECAUSE** there is a much better candidate: the empty Nucleus $N_{☺}$ seeks PG



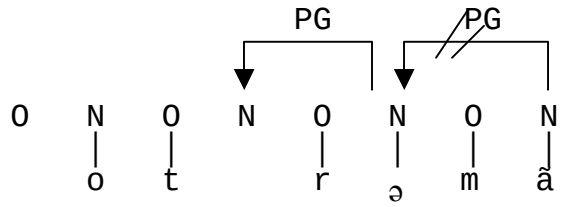
secret "secret"

French I

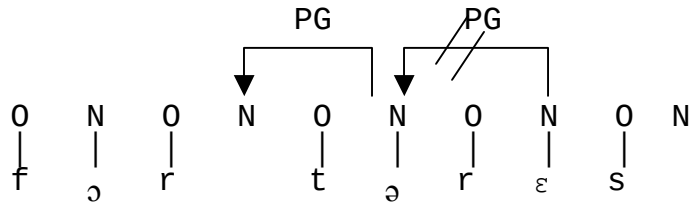


k tt b "ha causes to write"

c. cases of Government-Licensing: PG cannot apply to the potential alternation-site **bacause** the vowel hosted by this site has a job to do: it must properly govern the empty Nucleus $N_{\odot}$ hidden within the preceding [CC]-cluster



autrement "otherwise"



forteresse "fortress"

French I

(60)

advantages of PG running in a CVCV-frame:

a. it unifies the grammar: the KLV/Charette model needs four different devices in order to account for vowel-zero alternations:
   1. Constituent Government
   2. Interconstituent Government
   3. Government-Licensing
   4. Proper Government

   In a CVCV-frame, PG alone drives all alternations.

b. PG doesn't sometimes apply (...$_{ə}$CV cases) and sometimes is blocked (...$_{ə}$CCV). It **always** applies, only the targets are variable: [$_{ə}$] in ...$_{ə}$CV configurations, the empty Nucleus $N_{\odot}$ in ...$_{ə}$C$N_{\odot}$CV cases.

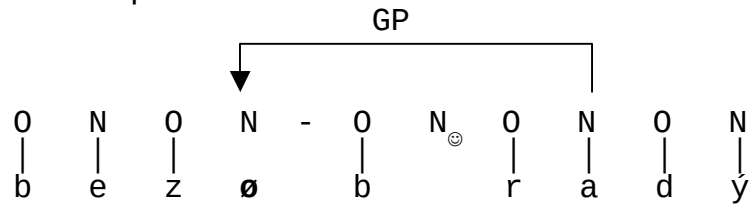
c. it replaces the observation
   "PG is blocked by an intervening governing domain"
   by the explanation
   "PG doesn't reach the potential alternation-site in case of a [CC]-cluster to its right ...$_{ə}$C$N_{\odot}$CV **BECAUSE** the empty Nucleus $N_{\odot}$ hidden within this cluster seeks PG"

(61)

facing the Czech II and French II cases of PG applying over [CC]-clusters:

a. "intervening governing domains block PG" is not explanatory and incompatible with the data.

b. PG running in a CVCV-frame has a problem but is not incompatible with the data:



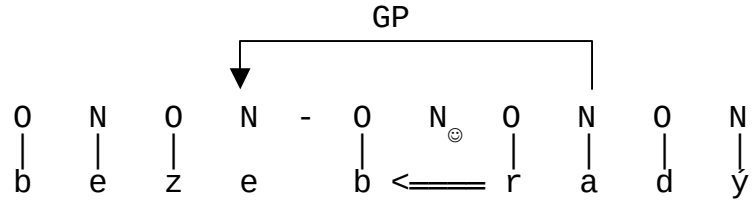
Czech *bezø-bradý* "without beard"

Why does N☺ not appear on the surface?

(62)

proposal Scheer (1996): a theory of consonantal interaction.

N☺ doesn't surface because the relation holding between the surrounding consonants closes the domain:



(63)

evaluation of the obtaining situation:

a. within a non-CVCV frame, no general theory accounting for vowel-zero alternations seems to be available.

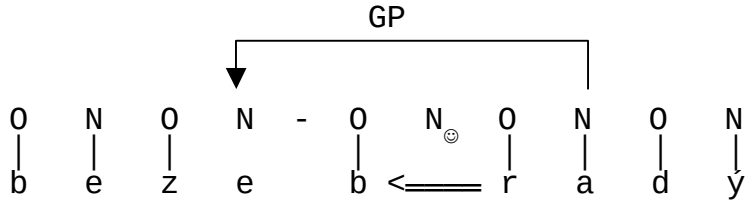
b. PG running in a CVCV-frame

1. offers the explanatory and unifying advantages mentioned above
2. is not falsified by the Czech II anf French II data
3. needs a theory of consonantal interaction in order to account for the Czech data

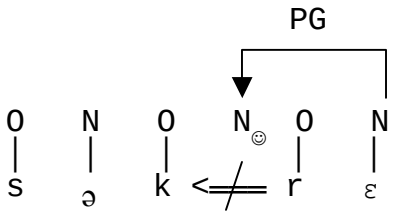
(64)

outline of such a theory:

a. it must say why the surrounding consonants close the domain in the case of Czech II *bezø-b<═radý*



but not in cases like French I **søcret*

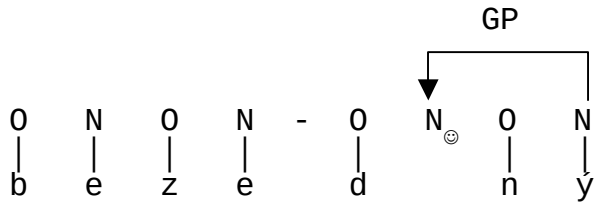


b. syntagmatic aspect

Czech (and more generally slavic languages) is reputed to exhibit word-initial [CC]-clusters that violate sonority restrictions or are unknown in other indo-european languages: e.g.

rt	rty	"lips"
dn	dno	"bottom"
jm	jméno	"name"
rv	rvát	"brawl"

NONE of these unorthodox clusters closes its domain: these stems, if occurring with a prefix, do ALWAYS provoke the prefixal -e-, PG does never apply over such clusters. E.g.



beze-dný, **bezø-dný* "without bottom"

Thus, the [CC]s over which PG applies are strictly the ones occurring word-initially in IE languages:

restrictions on word-initial [CC]s and [CC]s over which PG can apply are instances of the same phonological phenomenon

Hence, answering the question "why can PG apply over [vr] but not over [rv]?", the theory must provide an answer to the question "why can [vr] exist word-initially, but not typically [rv]?"

c. paradigmatic (segmental) aspect
the theory must say why the consonants of clusters like [kr] can interact and close their domain, while the ones of, say, [nr] cannot ([kr] can exist word-initially and be jumped by PG, [nr] cannot).

(65)
proposals (Scheer (1996)):
a. the key to the segmental restrictions must be found in the phonological identity of the various consonants. A model of consonantal representation is therefore needed. Within this model, Harris' (1990) notion of segmental complexity provides this key.
b. the key to the syntagmatic restrictions must be found in the lateral relations holding between the segments. Charette's (1990) idea of Government-Licensing provides this key.

(66)
the theory of consonantal interaction must provide an explanatory approach to the restrictions within word-initial [CC]s that could not do with the reverse phenomenology. Until now, phonological models do no more than observe these restrictions:
a. "sonority must increase within a branching Onset". **WHY?** The only answer comes from the observation. If the phenomenology was the reverse, this model would say "sonority must decrease within a branching Onset".

b. "within a branching Onset, government goes from left to right" (KLV (1987)). **WHY?** The only answer comes from the observation. This model could do with the reverse phenomenology, too.

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Lectures

Syllabic structure and Government: KLV (1987,198-218), summaries: Kaye (1990,306-308), Harris (1990,271-273), Charette (1990,233-235).

Charm: KLV (1985,311-314), KLV (1987,202-203,206-218).

Segmental complexity: Harris (1990,273-278).

Proper Government: KLV (1987,219-221), Charette (1990,235-239).

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Consonantal interaction: Scheer (1996,311-327).