

Why Phonology needs a theory of consonantal interaction

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purpose

- show that vowel-zero alternations in Czech prefixes falsify Government Phonology's device *Proper Government* (PG) as currently understood.
- present an alternative way of running PG within a strict CVCV-frame that is not falsified by the Czech data.
- indicate the explanatory and unifying advantages provided by the alternative model of PG.
- show that the price to pay in order for Phonology to dispose of a general theory of vowel-zero alternations is the elaboration of a theory of consonantal interaction.
- review the problem of word-initial consonant clusters and suggest that a theory of consonantal interaction can provide an explanatory account.

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vowel-zero alternations

1. zero obligatory: Czech, Moroccan Arabic, Tangale

	CC__CV		
__CV	__CCV + __C#	*	
=zero	=vowel		
a. Czech			
hud ø b-a	hudeb-a	*hudeb-a	'music NOM sg'
	hudeb- ø	*hud ø b- ø	'music GEN pl'
	hudeb-ní	*hud ø b-ní	'musical'
	šev- ø	*š ø v- ø	'seam'
š ø v-ec	šev-ec	*šev-ec	'shoemaker'
	šev- ø c-e	*š ø v- ø c-e	'shoemaker+infl'
b. Moroccan Arabic			
k ø t+b- ø	k+t ø b-u	*k+t+b- ø	'he writes'
	k+t ø b-u	*k ø t ø b-u	'they write'
	k+t+t+b- ø	*k ø t+t+b-u	'he causes to write'
c. Tangale (Chadic)			
	tana	*tan ø	'cow'
tan ø -go		*tana-go	'your cow'
dob ø -no		*dobe-no	'call me'
	dobu-n ø -go	*dob ø -n ø -go	'called me'

2. zero optional: German, French

	CC__CV		
__CV	__CCV + __C#	*	
=zero	=vowel		
d. (standard) German			
	inner	*inn ø r	'inner'
inn ø r-e	inner-e		'inner+infl'
	inner-lich	*inn ø r-lich	'internal'
	ver-inner-te	*ver-inn ø r-te	'internalized'
e. French			
s ø maine	semaine		'week'
	s ø cret	*s ø cret	'secret'
	forteresse	*fort ø resse	'fortress'
	crever	*cr ø ver	'die'

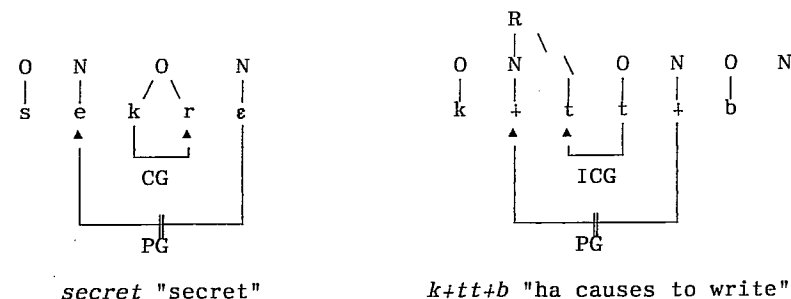
- (3) language-specific parameters:
- obligatory/ optional realisation of the zero-forms
 - the vowel that alternates with zero:

German + French	[ə]
Moroccan Arabic	[+]
Czech	[ɛ]
Tangale	[u,(a)]
- (4) generalisations
- in order to get a zero, there must be a vowel in the right context of the alternation-site. This vowel triggers the alternation:
vC-∅ but ∅C-V
 - in order to get a zero, the triggering vowel mustn't be separated from the alternation-site by more than one consonant:
∅C-V but vCC-V
 - in order to get a zero, the alternating vowel mustn't be preceded by more than one consonant
C∅C-V but CCvC-V

- (5) proposal by KLV (1987) relative to (4a,b):
these vowel-zero alternations are instances of an internuclear relation:
Proper Government (PG)

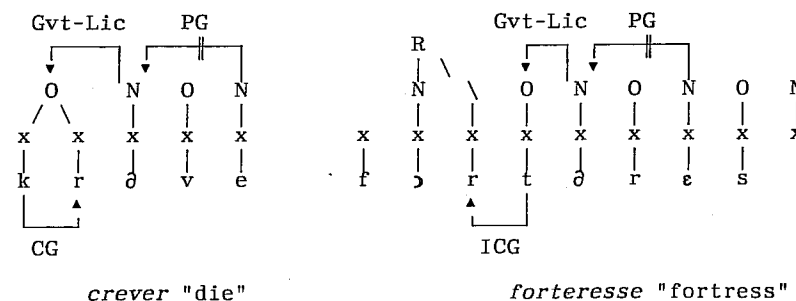
- (6) Proper Government (cf. KLV (1987), Kaye (1990), Charette (1990))
- a Nucleus may not be expressed if it is governed by a vowel to its right
 - a properly governed Nucleus cannot itself govern
 - PG cannot apply over governing domains.
governing domains are (cf. KLV (1987)):
 - branching Onsets = Constituent Government (CG)
 - Coda-Onset clusters = Interconstituent Government (ICG)

- (7) illustration of (6c):



- (8) proposal by Charette (1990) relative to (4c):
Government Licensing
- as seen above, a governing relation holds within a [CC]-cluster (either Constituent- or Interconstituent Government)
 - in order for the consonantal Head to be able to exert this government, it must be Government-Licensed by a vowel to its right.

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

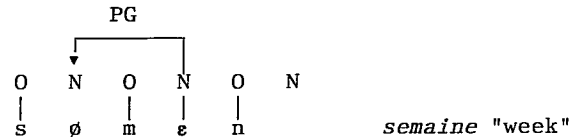


alternative proposal

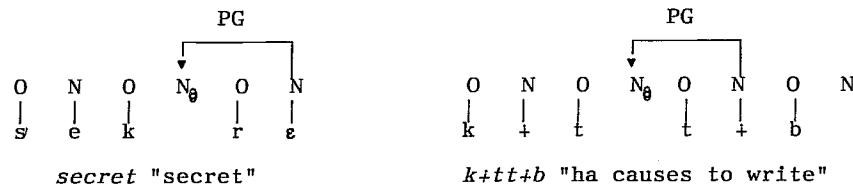
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alternative proposal within in CVCV-frame (for CVCV, cf. Lowenstamm (1995)):

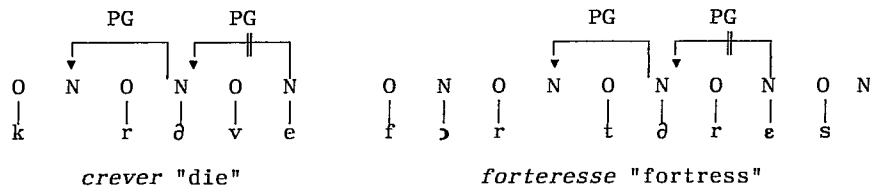
a. PG applies to the potential alternation-site



b. PG does not apply to the potential alternation-site **BECAUSE** there is a much better candidate: the empty Nucleus N_0 seeks PG



c. cases of Government-Licensing: PG cannot apply to the potential alternation-site because the vowel hosted by this site has a job to do: it must properly govern the empty Nucleus N_0 hidden within the preceding [CC]-cluster



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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 (...øCV cases) and sometimes is blocked (...øCCV). It **always** applies, only the targets are variable: [ø] in ...øCV configurations, the empty Nucleus N_0 in ...øCN $_0$ CV cases.

c. it replaces the **observation**

"PG is blocked by an intervening governing domain"

by the **explanation**

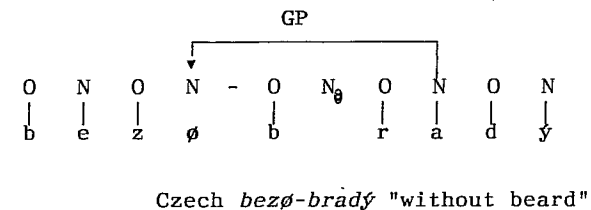
"PG doesn't reach the potential alternation-site in case of a [CC]-cluster to its right ...øCN $_0$ CV **BECAUSE** the empty Nucleus N_0 hidden within this cluster seeks PG"

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

a. the KLV/Charette-model is falsified

b. PG running in a CVCV-frame has a problem but is not falsified:

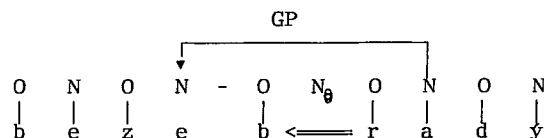


Why doesn't N_0 appear on the surface?

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

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



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evaluation of the obtaining situation:

- a. the theory of PG running in a non-CVCV frame is falsified by the Czech data. Hence, within a non-CVCV frame, there is no general theory accounting for vowel-zero alternations anymore.
- b. the theory of PG running in a CVCV-frame
 1. offers the explanatory and unifying advantages mentioned above
 2. is not falsified by the Czech data
 3. needs a theory of consonantal interaction in order to account for the Czech data

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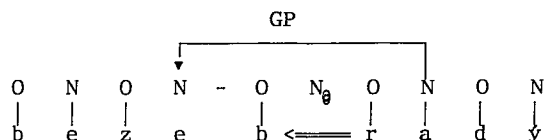
all of the discussed alternations are obviously instances of one sole phonological principle: they all exhibit a coherent phenomenology.

=> if Phonology is to dispose of a theory accounting for all these alternations, it needs a theory of consonantal interaction.

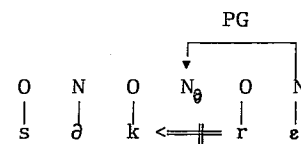
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outline of such a theory:

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



but not in cases like French **søcret*

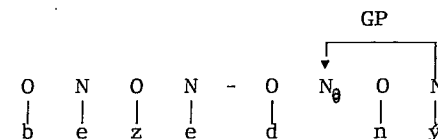


b. syntagmatic aspect

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

Thus, 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).

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proposals in 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.

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the theory of consonantal interaction will provide an explanatory approach to the restrictions within word-initial [CC]s. 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, this statement does not follow from any phonological principle.
- b. "within a branching Onset, government goes from left to right" (KLV (1987)). WHY? The only answer comes from the observation, this statement does not follow from any phonological principle.

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