

## On Locality and Phonology in Phonology

(extracted from Scheer 2000)

(advanced, week 2)

- (1) Eight questions and two answers
- a. questions
    1. how can any linguist not try to unify syntax, semantics and phonology?
    2. why are almost all phonological and all syntactic processes right-to-left?
    3. is human speech acoustic by accident?
    4. in which way do phonetic properties of segments condition syllable structure?
    5. ought phonology to be as local as syntax?
    6. are internuclear government and internuclear licensing in complementary distribution?
    7. which phonological actors may contract which relations with which other actor?
    8. who governs the zero and who licenses R in the heavy sequence  $\emptyset$ TRVV ?
  - b. answers
    1. Locality
    2. UP vs. DOWN

### Question 1

how can any linguist not try to unify syntax, semantics and phonology?

of course is there only one UG with a single set of dispositions that enjoy a syntactic, phonological, semantic etc. expression, and not as many UGs as there are modules. Bromberger and Halle's (1989) position is desperate.

### Question 2

why are all syntactic and almost all phonological processes right-to-left?

claim: ALL phonological processes are right-to-left. ALL syntactic processes are right-to-left. UG is only regressive.

there are processes that are only regressive, and others that are both regressive and progressive. But there is not a single phonological event that is only progressive.

|   |  |
|---|--|
| (2) processes that are ONLY regressive  | processes that are regressive AND progressive  |
| <ul style="list-style-type: none"> <li>a. homorganic [NC]</li> <li>b. vowel – zero alternations</li> <li>c. all segmental effects applying to vowels in closed syllables</li> <li>d. all segmental effects applying to consonants in Codas</li> </ul> | <ul style="list-style-type: none"> <li>a. assimilations (voice etc.)</li> <li>b. spirantizations</li> <li>c. vowel harmonies</li> <li>d. palatalizations (nocte &gt; span notʃe, German ich-ach)</li> <li>e. compensatory lengthening</li> </ul> |

serious obstacle: compensatory lengthening

(3) two kinds of compensatory lengthening

|   |   |
|---|---|
| <p>a. compensatory lengthening: target provided by the loss of a segment</p> <p>Latin *fideslia &gt; fedeelia</p> | <p>b. prosodic lengthening: target provided by prosody</p> <p>Italian /fato/ --&gt; [fáato]</p> |
|---|---|

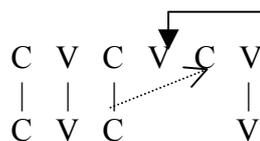
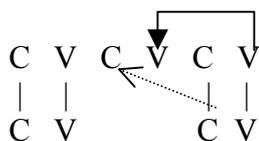
(4) spreading may be both ways, but the control over the process is only regressive

|   |   |
|---|---|
| <p>a. communication between the target and the following Nucleus</p> <p>fáato</p> <p>píigro</p> | <p>b. no communication between the target and the following Nucleus</p> <p>fátto</p> <p>páрко</p> |
|---|---|

(5) the same applies to regressive and progressive gemination: the condition on this process is the communication of the straddled Nucleus with its righthand neighbour.

a. regressive gemination

b. progressive gemination

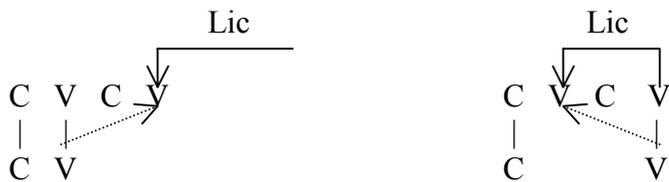


|   |  |
|---|--|
| (6) Closed Syllable Shortening: same story  |  |
| <p>a. communication between the 2<sup>nd</sup> leg of the long vowel and the following Nucleus</p> <p>C V C V C V C V<br/>               <br/>k &lt;== r a v a</p> <p><u>CV</u><br/>Czech [kraav-a] kráva<br/>Turkish [meraak-ı]<br/>Cl. Arabic [ʔa-quul-u]</p> | <p>b. no communication between the 2<sup>nd</sup> leg of the long vowel and the following Nucleus</p> <p>C V C V C V C V<br/>               <br/>k &lt;== r a v ø</p> <p><u>C#</u><br/>Czech [kraaf-ø] krav<br/>Turkish [merak-ø]</p><br><p>C V C V C V C V<br/>               <br/>k &lt;== r a v k a</p> <p><u>CCV</u><br/>Czech [kraf-ka] kravka<br/>Turkish [merak-tan]<br/>Cl. Arabic [ʔa-qul-na]</p> |

(7) long vowels may be sensitive or insensitive to their right environment, even in the same language. Hence, there must be two different lexical representations for both kinds of VV.

|           |          |       |            |                                   |
|-----------|----------|-------|------------|-----------------------------------|
|           | C CV     | C #   | C CCV      |                                   |
| √kra(a)v- | kraava   | kraf  | krafka     | cow NOMsg, GENpl, little cow      |
| VS.       |          |       |            |                                   |
| √flaam-   | flaamovæ | flaam | flaamka    | flame pl, flame sg, flame (femme) |
|           |          |       | flaamskii  | flamish adj.                      |
|           |          |       | flaamʃcina | flamish (language)                |

(8) a. alternating long vowels are head-initial      b. non-alternating long vowels are head-final



(9) sum: the table looks rather like that:

| processes that are ONLY regressive                              | processes that are regressive AND progressive        |
|---|--|
| a. homorganic [NC]  | a. assimilations (voice etc.)                        |
| b. vowel – zero alternations                                    | b. vowel harmonies                                   |
| c. all segmental effects applying to vowels in closed syllables | palatalizations (nocte > span notʃe, German ich-ach) |
| d. all segmental effects applying to consonants in Codas        |  |
| e. spirantizations  |  |
| f. length (consonantal, vocalic, lengthening and shortening)    |  |

### Question 3

Is human speech vocal by nature or by accident?

- (10) a. Chomskyan claims on 1) competence vs. performance and 2) UG enforce a attitude that does pay no attention at all to the medium that spreads out the linguistic information created in the human brain. Just like journalists do not care whether their paper is diffused on the web, on paper, vocally etc. as long as it gets to its destination.
- b. all indicators concorde: grammatical functioning and structure are entirely independant from the interface that relates grammar to the extra-brainal biological and physical world.
1. physical impairment of speech organs does not cause any kind of damage of the grammar.
  2. humans who cannot fix their pronunciation because they are deaf are in full possession of a perfectly well-formes grammar.
  3. in case relevant parts of the brain are physically damaged, grammar is damaged as well.
  4. the mammel homo has spent most of its existence on earth without speech (some 60k out of about 2 Mio years). No biological device for uttering speech (the mouth has other functions). However, all physically non-impaired humans use their mouth. Thus, the mouth has been colonized by speech. This move was subject to a number of conspiring accidental properties of his physical and biological environment:
    - if he absorbed food through his skin and did not need oxygen, the mouth would not exist, and could not have been fertilized. Language would be non-phonetic, but it still would exist for the sake of superior social organisation and the availability of appropriate brain-structures.
    - the human evolves in an environment that transmits sound. If he were a submarine species or lived on a planet without atmosphere, speech would not be vocal.
  5. there are non-vocal natural languages, and they emerge any time at least two physically impaired humans grow up together: sign language.

(11) conclusion

- a. human speech is vocal by accident, cf. as early as Whitney (1875)
- b. phonological theories that reproduce the physical and phonetic properties of the mouth are mistaken. They make a theory of the mouth/ of performance, not a theory of human language/ competence. Carr (1998).
- c. the word **Phonology** is a misunderstanding: Phonology is everything but phon.
- d. the correct meaning of the word Phonology is "Interface between the neuronal and the extra-neuronal worlds". All existing media, i.e. vocal and signal, and all other possible kinds (touch, morse, light, taste etc.) are controlled by the same set of UG-mechanisms that are present in the genetic code of the species.

**Question 4**

Source of syllable structure: in which way do phonetic properties of segments condition syllable structure?

(12) in **NO** way

- a. classically, syllable structure is a direct function of inherent phonetic properties of sounds: sonority drives syllabification. Sonority depends on anatomic parameters such as aperture, stricture, liberty of air-flow etc.
- b. phonetics are out of the business, cf. question 3. Hence, they may not condition a truly phonological object such as the syllable in any way. If the syllable has its place in UG, sonority must be an optical illusion.
- c. if sonority is not sonority, what is it? John Harris (1990) has answered this question: complexity.
- d. only vocal speech is more or less sonorous. Any object expressed by any physical/ biological means is more or less complex.
- e. the contrasts observed in sonority are a mere consequence of the complexity of (non-vocal) phonological primes. Their complexity may have a vocal, signed, tactile etc. expression.

**Question 5**

Ought Phonology to be as local as syntax?

(13) yes, for the reason exposed in the discussion of question 1.

Locality in Syntax

two cases:

- a. strong islands (e.g. Ross 1967, Chomsky 1986) – no extraction possible whatsoever prepositions, relative clauses, conjunctions, adjuncts
- b. weak islands ("Relativised Minimality" Rizzi 1990, Cinque 1990)  
extraction possible if Locality is respected.

Roughly speaking, anti-identity wins: a relation between A and B is possible only if there is no intervening object Z that is identical to A/B or may be assimilated to them.

- (14) strong island  
 a. [De qui]<sub>i</sub> admires-tu la photo \_\_<sub>i</sub> ?  
 b. \* [De qui]<sub>i</sub> s'est-il mis à pleurer devant la photo \_\_<sub>i</sub> ?

(15)

|                |                    |                      |                   |
|----------------|--------------------|----------------------|-------------------|
| moved object → | quantifier<br>(16) | subject<br>(17)-(19) | head<br>(20)-(21) |
| weak island ↓  |                    |                      |                   |
| quantifier ▼   | *                  | ok                   | ok                |
| subject        | ok                 | *                    | ok                |
| head           | ok                 | ok                   | *                 |

- (16) a. Comment<sub>i</sub> Jean a-t-il dormi \_\_<sub>i</sub> ?  
 b. \* Comment<sub>i</sub> ne penses-tu pas réparer la voiture de Jean \_\_<sub>i</sub> ?  
 c. Comment<sub>i</sub> penses-tu réparer la voiture de Jean \_\_<sub>i</sub> ?

- (17) a. Jean<sub>i</sub> n'a rien<sub>j</sub> \_\_<sub>i</sub> mangé \_\_<sub>j</sub>.  
 b. \*Jean n'a mangé rien.

- (18) a. Jean<sub>i</sub> semble \_\_<sub>i</sub> dormir.  
 b. Il semble que Jean dort.

- (19) \*Jean<sub>i</sub> semble qu'il \_\_<sub>i</sub> dort.

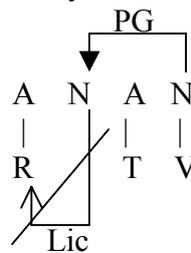
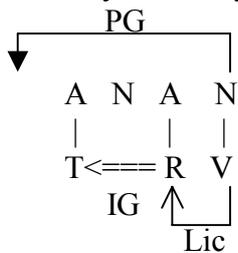
- (20) a. Could<sub>i</sub> John \_\_<sub>i</sub> have come ?  
 b. \* Have<sub>i</sub> John could \_\_<sub>i</sub> come ?

- (21) Jean<sub>i</sub> ne mangera rien<sub>j</sub> \_\_<sub>i</sub> \_\_<sub>j</sub>.<sup>1</sup>

(22) the actual model is non-local in one and only one instance:

a. PG may reach beyond TR

b. PG may not reach beyond RT



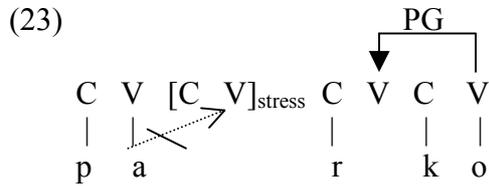
<sup>1</sup> Il faut en outre noter que la classe A' (quantifieurs) est soumise à une restriction: les éléments intervenants A' ne bloquent que la mise en rapport d'ajouts quantificationnels (par exemple wh- non-argumentaux, *comment* sous (ii)), mais ne provoquent pas d'effet notable sur les arguments quantifiés (p.ex. wh- argumentaux, *que* sous (i)). En voici une illustration.

- (i) Que<sub>i</sub> te demandes-tu comment<sub>j</sub> réparer \_\_<sub>i</sub> \_\_<sub>j</sub> ?  
 (ii) \* Comment<sub>i</sub> te demandes-tu quoi<sub>j</sub> réparer \_\_<sub>i</sub> \_\_<sub>j</sub> ?

A la différence de (ii) qui est agrammatical, l'élément déplacé est un Argument sous (i), et son déplacement par-dessus du quantifieur *quoi* autorisé. Rizzi (1990) discute les détails de ce contraste.

### Question 6

Are PG and internuclear Licensing in complementary distribution?



- (24) a. the lateral relation shown must be PG, not Licensing: it makes the empty N mute.  
 b. hence, what prevents the [o] from licensing the [CV]?  
 c. only solution: PG and internuclear Licensing are in complementary distribution: a Nucleus cannot simultaneously govern and license other Nuclei.  
 d. this is odd: we know from The Coda Mirror that a Nucleus is able to simultaneously license and govern its Onset.

### Question 7

Typology of lateral relations:

which phonological actors may contract which relations with which other actor?

- (25) evolution
- KLV 90: only one internuclear relation for which the terms "Government" and "Licensing" were synonymously used (cf. "Licensing Principle" in Kaye 1990a).
  - Constituent and Interconstituent Government
  - Licensing of a consonant by a Nucleus: Charette (1990)
  - Interonset Government (IO) (Gussmann & Kaye & Kaye 1993)
  - Infrasegmental Government – concurrent to IO, reverse headship (Scheer 1996)
  - Government of an Onset by its Nucleus – The Coda Mirror
  - internuclear Licensing – cf. Italian
  - The Coda Mirror:  
 Government and Licensing have a phonological identity that is predictable  
 - Government inhibits the segmental expression of its target  
 - Licensing backs up the segmental expression of its target

- (26) lateral relations that structure the linear string
- |                    | empirical illustration   | currently called     |
|--------------------|--|----------------------|
| a. source: Nucleus |  |                      |
| Gvt V --> V        | vowel – zero alternations  | Proper Government    |
| Lic V --> V        | length-management  | —                    |
| Gvt V --> C        | intervocalic lenition, cf. The Coda Miroir                             | Gvt Nucleus--> Onset |
| Lic V --> C        | French: TR vs.RT, *VTR $\emptyset$ vs. ok VRT $\emptyset$ <sup>2</sup> | Gvt-Licensing        |

<sup>2</sup> En français, certains locuteurs peuvent omettre le schwa dans des configurations /VRT $\emptyset$ CV/ *fortement*, alors que sa présence est obligatoire s'il est précédé par une Attaque branchante /VTR $\emptyset$ CV/ *autrement*, cf. Dell (1973:225), Scheer (à paraître A).

b. source: Onset

|             |  |                    |   |
|-------------|--|--------------------|---|
| Gvt C --> C | } French: TR vs. RT, *VTR $\emptyset$ vs. ok VRT $\emptyset$ ,<br>cf. discussion | Infrasegmental Gvt |   |
| Lic C --> C |  | —                  |   |
| Gvt C --> V |  | does not occur     | — |
| Lic C --> V |  | does not occur     | — |

### What a vowel can do

|  |  |
|--|--|
| <p>a vowel can govern another vowel</p> <p style="text-align: center;">Gvt</p> <p style="text-align: center;">O N O N O N</p> <p style="text-align: center;">         </p> <p style="text-align: center;">l o k <math>\emptyset</math> t e</p> <p>vowel – zero alternations, e.g.<br/>Czech loket vs. lok<math>\emptyset</math>-e<br/>"elbow NOMsg, GENsg"</p> | <p>a vowel can license another vowel</p> <p style="text-align: center;">Lic</p> <p style="text-align: center;">C V [C -y]<sub>stress</sub> C V</p> <p style="text-align: center;">         </p> <p style="text-align: center;">f a t o</p> <p>length management:<br/>compensatory lengthening,<br/>Closed Syllable Shortening</p>                  |
| <p>a vowel can govern a consonant</p> <p style="text-align: center;">Gvt</p> <p style="text-align: center;">O N O N</p> <p style="text-align: center;">       </p> <p style="text-align: center;">C V C V</p> <p>intervocalic lenition</p>   | <p>a vowel can license a consonant</p> <p style="text-align: center;">Lic</p> <p style="text-align: center;">A N A N</p> <p style="text-align: center;">       </p> <p style="text-align: center;">T &lt;==== R V</p> <p style="text-align: center;">GI</p> <p>TR vs. RT, *VTR<math>\emptyset</math> vs. ok VRT<math>\emptyset</math> (French)</p> |

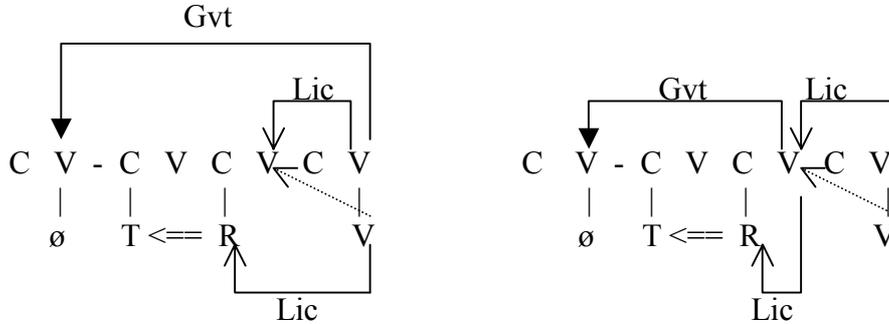
### What a consonant can do

|  |   |
|--|---|
| <p>a consonant can govern another consonant</p> <p style="text-align: center;">Lic</p> <p style="text-align: center;">A N A N</p> <p style="text-align: center;">       </p> <p style="text-align: center;">T &lt;==== R V</p> <p style="text-align: center;">Gvt</p> <p style="text-align: center;">?</p> | <p>a consonant can license another consonant</p> <p style="text-align: center;">Lic</p> <p style="text-align: center;">A N A N</p> <p style="text-align: center;">       </p> <p style="text-align: center;">T &lt;==== R V</p> <p style="text-align: center;">Lic</p> <p style="text-align: center;">?</p> |
| <p>TR vs. RT, *VTR<math>\emptyset</math> vs. ok VRT<math>\emptyset</math> (French)</p>   | <p>TR vs. RT, *VTR<math>\emptyset</math> vs. ok VRT<math>\emptyset</math> (French)</p>  |
| <p>a consonant can govern a vowel</p> <p style="text-align: center;">NO</p>  | <p>a consonant can license a vowel</p> <p style="text-align: center;">NO</p>  |

**Question 8**

Heavy sequences  $\emptyset$ TRVV: who governs the zero, who licenses the R?

- (27) a. solution at odds with Locality  
 plus: a N cannot simultaneously govern and license another N
- b. solution at odds with the passive status of the first part of the long vowel: how could a dependent N govern and license?



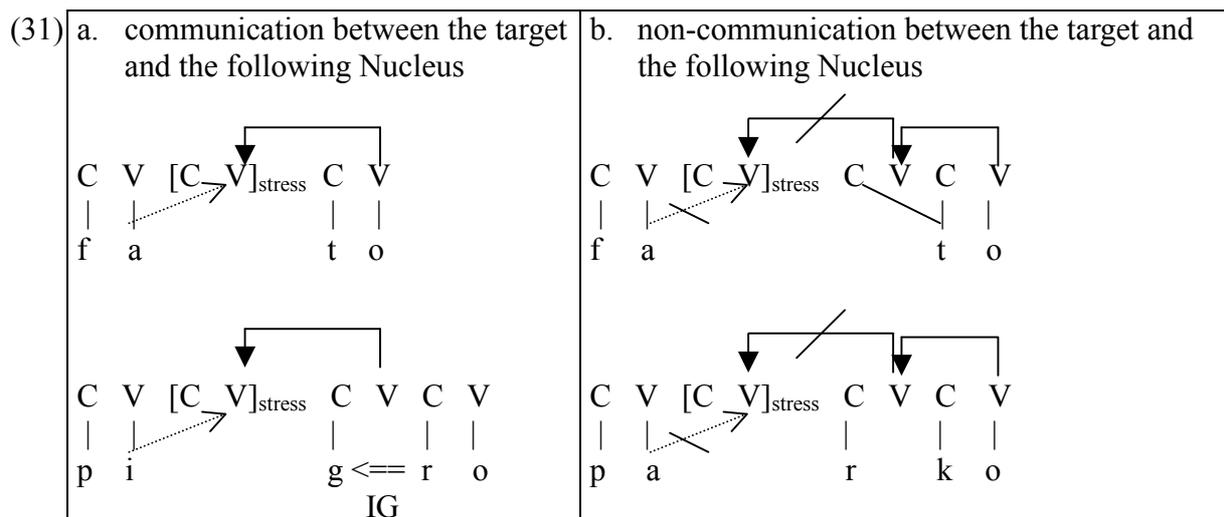
**Locality**

see also Szigetvári & Dienes (ms), Szigetvári (2000)

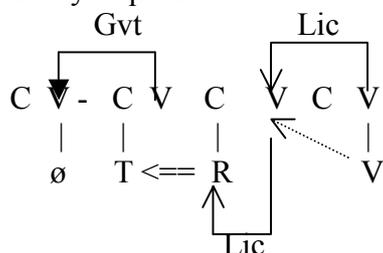
- (28) a. Nuclei may govern and license if they are not governed themselves.  
 b. the relations between phonological categories is strictly local.
- (29) Consequences
- no phonetic condition on governors: Nuclei govern and license independently from their phonetic status (vs. before: only audible Nuclei are governors).
  - the number of lateral actors increases: all Nuclei that could govern and license before plus those enclosed within a branching Onset.
  - the number of lateral actors decreases: Nuclei may not reach beyond TR-clusters anymore.
  - the balance of this expansion/ restriction of lateral activity is not zero. Its overlap is empirically relevant: epirical coverage is better (cf. Latin).
  - dephonetisation of Phonology  
 phonologisation of Phonology

- (30) a. open syllable:  
 Gvt reaches beyond TR
- b. closed syllable:  
 Gvt cannot reach beyond RT





(32) heavy sequences  $\emptyset$ TRVV



(33) status of final empty Nuclei (FEN)

classically, there are two independent problems:

- a. why are FEN phonetically unexpressed?
- b. how come they are able to govern?

in "parc" /par $\emptyset_1$ c $\emptyset_2$ /, the only way to satisfy  $\emptyset_1$  is PG coming from the FEN.

[same issue in non-CVCV: how come the FEN can government-license the [k]?]

(34) Locality has nothing to say about (33)a, but solves (33)b: there is nothing wrong anymore with phonetically unexpressed Nuclei that govern.

(35) as before, a special case has to be made for FEN

FEN can govern Nuclei that are lexically empty, i.e. /par $\emptyset_1$ c $\emptyset_2$ /, but are unable to trigger vowel-zero alternations, i.e. to govern lexically filled Nuclei that are specified for vowel-zero alternations.

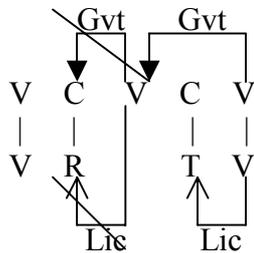
(36) Hence,

before and now

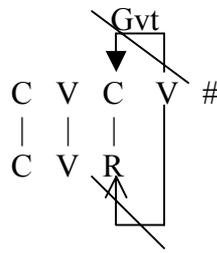
|   | can govern a lexically filled Nucleus | can govern a lexically empty Nucleus |
|---|---------------------------------------|--------------------------------------|
| independent Nucleus<br>(=phonetically realised or mute because of IG) | yes                                   | yes                                  |
| final dependent Nucleus<br>(reason of muteness: being final)          | no                                    | yes                                  |
| non-final dependent Nucleus<br>(reason of muteness: PG)               | no                                    | no                                   |

(37) what about final Codas?  
 Coda = ungoverned and unlicensed

a. internal Coda



b. final Coda



if FEN possess lateral actorship, why should they be unable to govern and license their Onset? They have to be unable to do so because otherwise the theory cannot refer to  $\_ \{ \#, C \}$  in a uniform fashion.

(38) answer

- a. we know that FEN cannot govern Nuclei that are lexically filled.
- b. neither can they govern Onsets that are lexically filled.
- c. the same holds for Licensing

==> generalisation: FEN may not be the head of a lateral relation if its target is lexically filled.

(39) Hence,

|   | may be the Head of a lateral relation (Gvt or Lic) with a constituent (Onset or Nucleus) that is lexically |       |
|---|--|-------|
|   | filled   | empty |
| independent Nucleus<br>(=phonetically realised or mute because of IG) | yes  | yes   |
| final dependent Nucleus<br>(reason of muteness: being final)          | no   | yes   |
| non-final dependent Nucleus<br>(reason of muteness: PG)               | no   | no    |

(40) **Lenition of branching Onsets:** Locality makes the correct prediction

|  |   |
|--|---|
| <p>TR in Coda Miroir position, i.e. {#,C}__</p> <p>T is ungoverned but licensed<br/>R is governed and licensed</p> | <p>TR in intervocalic position</p> <p>T is governed and licensed<br/>R is governed and licensed</p> |
|--|---|

predictions:

1. both members of a branching Onset behave as if the second member were not there.
2. both members of an intervocalic branching Onset are in intervocalic position.

Thus:

Coda Mirror

#TRV = #TV      VRTRV = VRTV

#TRV = #RV      VRTRV = VRRV

V\_\_V

VTRV = VTV

VTRV = VRV

TRUE for Latin > French

(41) evolution of TR with T=dental

|    | #__                       | Coda__               | Coda<br>__C   __# | V__V               |
|----|---------------------------|----------------------|-------------------|--------------------|
| tr | <b>tres</b> <b>trois</b>  | alt(e)ru    autre    |                   | petra      pierre  |
|    | tractare    traiter       | capistru    chevêtre |                   | it(e)rare    errer |
| dr | <b>drappu</b> <b>drap</b> | perd(e)re    perdre  |                   | quadratu    carré  |

(42) evolution of simple dentals

|   | #__                      | Coda__               | Coda<br>__C   __# | V__V                |
|---|--------------------------|----------------------|-------------------|---------------------|
| t | <b>tela</b> <b>toile</b> | cantare      chanter |                   | vita          vie   |
| d | <b>dente</b> <b>dent</b> | ardore      ardeur   |                   | codā          queue |

(43) evolution of TR with T=labial

|    | #__                | Coda__         | Coda<br>C   __# | V__V   |          |        |
|----|--------------------|----------------|-----------------|--------|----------|--------|
| pr | <b>pruna</b>       | <b>prune</b>   | rump(e)re       | rompre | capra    | chèvre |
| pl | <b>plenu</b>       | <b>plein</b>   |                 |        | duplu    | double |
| br | <b>branca</b>      | <b>branche</b> | membrum         | membre | labra    | lèvre  |
| bl | <b>*blastimare</b> | <b>blâmer</b>  |                 |        | tab(u)la | table  |

(44) evolution of simple labials

|   | #__          | Coda__       | Coda<br>C   __# | V__V  |      |      |
|---|--------------|--------------|-----------------|-------|------|------|
| p | <b>porta</b> | <b>porte</b> | talpa           | taupe | ripa | rive |
| b | <b>bene</b>  | <b>bien</b>  | herba           | herbe | faba | fève |

(45) evolution of TR with T=velar

|    | #__            | Coda__        | V__V                               |
|----|----------------|---------------|------------------------------------|
| kr | <b>credere</b> | <b>croire</b> | ? lacrima afr. lairme              |
| kl | <b>clave</b>   | <b>clef</b>   | circ(u)lu cercle mac(u)la maille   |
|    |                |               | {u,o}__ genuc(u)lum afr genoil     |
| gr | <b>grana</b>   | <b>graine</b> | ? flagrare flairer                 |
| gl | <b>glande</b>  | <b>gland</b>  | ung(u)la ongle coag(u)lare cailler |
|    |                |               | {u,o}__ ?                          |

(46) evolution of simple velars

|   | #__        | Coda__       | Coda<br>C__#      | V__V   |
|---|------------|--------------|-------------------|--|
| k | {i,e}      | centu cent   | mercede merci     | placere plaisir  |
|   | {u,o}      | cubitu coude |                   | securu afr. sœur   |
|   | {u,o}__a   | cor cœur     | rancore rancœur   | Sa(u)conna Saône   |
|   | {i,e,a}__a | carru char   | arca arche        | carruca charrue<br>jocare jouer                          |
| g | {i,e}      | id.          | id.               | pica pie   |
|   | {i,e,a}__a | gelare geler | argentu argent    | necare noyer   |
|   | {u,o}__a   | gamba jambe  | virga verge       | pacare payer   |
|   | {u,o}      | id.          | id.               | rege roi   |
|   | {u,o}      | gula gueule  | angustia angoisse | regale royal<br>paganu païen<br>ruga rue<br>*agustu août |

(47) SUM of the evolution of simple velars

|   | Coda Miroir<br>résultat en français | V__V<br>résultat en français                    |
|---|-------------------------------------|---|
| k | {i,e}                               | affrication $\widehat{ts} > s$                  |
|   | {u,o}                               | spitting [j] and affrication $\widehat{ts} > s$ |
|   | {u,o}__a                            | loss  |
|   | {i,e,a}__a                          | affrication $\widehat{tj} > j$                  |
| g | {u,o}__a                            | loss  |
|   | {i,e,a}__a                          | affrication $\widehat{tj} > j$                  |
|   | {u,o}                               | spitting [j] and loss                           |
|   | {u,o}                               | loss  |
|   | {u,o}                               | affrication $\widehat{d3} > 3$                  |
|   | {u,o}                               | affrication $\widehat{d3} > 3$                  |
|   | {u,o}__a                            | affrication $\widehat{d3} > 3$                  |
|   | {u,o}                               | loss  |
|   | {u,o}                               | g   |
|   | {u,o}                               | loss  |

(48) generalisation about velars

- a. in Strong Position, latin velars appear as such in French (plus palatalisations).
- b. in intervocalic position, simple velars are lost if they are adjacent to [u,o]. In all other cases, they spit out a [j] and disappear.

(49) comparison T vs. TR with T=velar

| T              |  | Coda Mirror<br>resultat of T in French |  | TR               |  | Coda Mirror<br>resultat of T in French                      |  |
|----------------|--|--|--|------------------|--|---|--|
| k,g            |  | inchangé                               |  | kr, kl<br>gr, gl |  | inchangé  |  |
|                |  | V__V<br>result in French               |  |                  |  | V__V<br>result in French                                    |  |
| adjacent [u,o] |  | loss                                   |  | adjacent [u,o]   |  | ?, cf. note <b>Erreur !</b>                                 |  |
| k,g            |  | spits out a [j] and disappears         |  | kr, kl<br>gr, gl |  | <b>Signet non défini.</b><br>spits out a [j] and disappears |  |
| elsewhere      |  |  |  | elsewhere        |  |   |  |

(50) general comparison T vs. TR

| T              |  | Coda Mirror<br>resultat of T in French |  | TR               |  | Coda Mirror<br>resultat of T in French |  |
|----------------|--|--|--|------------------|--|--|--|
| p,b            |  | unchanged                              |  | pr, pl<br>br, bl |  | unchanged                              |  |
| t,d            |  | unchanged                              |  | tr, dr           |  | unchanged                              |  |
| k,g            |  | unchanged                              |  | kr, kl<br>gr, gl |  | unchanged                              |  |
|                |  | V__V<br>resultat of T in French        |  |                  |  | V__V<br>resultat of T in French        |  |
| p,b            |  | spirantisation                         |  | pr, br<br>pl, bl |  | spirantisation<br>voicing              |  |
| t,d            |  | loss                                   |  | tr, dr           |  | loss                                   |  |
| adjacent [u,o] |  | loss                                   |  | adjacent [u,o]   |  | ?                                      |  |
| k,g            |  | spits out a [j] and disappears         |  | kr, kl<br>gr, gl |  | spits out a [j] and disappears         |  |
| elsewhere      |  |  |  | elsewhere        |  |  |  |

(51) evolution of simple Liquids

|   | #__    |       | Coda__   |        | Coda |     | V__V   |         |
|---|--------|-------|----------|--------|------|-----|--------|---------|
|   | rege   | roi   | cin(e)re | cendre | __C  | __# | pira   | poire   |
| r |        |       |          |        |      |     |        |         |
| l | levare | lever | mer(u)lu | merle  |      |     | dolore | douleur |

(52) evolution of Liquids when preceded by an Obstruent

|    | #__                | Coda__         | Coda<br>C | #        | V__V        |             |
|----|--------------------|----------------|-----------|----------|-------------|-------------|
| pr | <b>pruna</b>       | <b>prune</b>   | rump(e)re | rompre   | capra       | chèvre      |
| pl | <b>plenu</b>       | <b>plein</b>   |           |          | duplu       | double      |
| br | <b>branca</b>      | <b>branche</b> | membrum   | membre   | labra       | lèvre       |
| bl | <b>*blastimare</b> | <b>blâmer</b>  |           |          | tab(u)la    | table       |
| tr | <b>tres</b>        | <b>trois</b>   | alt(e)ru  | autre    | petra       | Pierre      |
|    | <b>tractare</b>    | <b>traiter</b> | capistru  | chevêtre | it(e)rare   | errer       |
| dr | <b>drappu</b>      | <b>drap</b>    | perd(e)re | perdre   | quadratu    | carré       |
| kr | <b>credere</b>     | <b>croire</b>  | ?         |          | lacrima     | afr. lairme |
| kl | <b>clave</b>       | <b>clef</b>    | circ(u)lu | cercle   | mac(u)la    | maille      |
| gr | <b>grana</b>       | <b>graine</b>  | ?         |          | flagrare    | flairer     |
| gl | <b>glande</b>      | <b>gland</b>   | ung(u)la  | ongle    | coag(u)lare | cailler     |

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