

Observations on the *Littera* Rule
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I. Most historical grammars of Latin mention the phenomenon variously called the *littera* rule or the *Iuppiter* rule. But the formulations are divergent.

A. Rix 1998:625

Formulation: Long vowel plus singleton consonant can be replaced by a short vowel plus geminate.

Examples: Osc. *tt*-perfect from reinterpretation of past participle
Lat. *cantassō*-type.

Comments: No phonological or tempero-spatial restrictions, applies to both Latin and Oscan.

This is pretty much the view of Szemerényi 1953 etc. too.

B. Meiser 1998:77

Formulation: Long vowel plus singleton consonant can be replaced by a short vowel plus geminate.

Examples: *Iŭppiter* < *Iūpiter*
littera (It. *lettera*) < *lītera*
Varrō ~ *vārus* 'bowlegged'
narrō ~ *gnārus*.

Comments: Incomplete diffusion of innovation; internal borrowings from sociolect.

C. Sihler 1995:224

Formulation: Certain words show lengthening of a consonant, with shortening of the preceding vowel if long.

Examples: *Iuppiter* < *Iūpiter*
littera < *lītera*, OL *leitera* < **leyt*- 'scratch'
mittō 'send' < **mītō*?

Comments: Since more geminates are found in inscriptions and graffiti (LITTVS, SVCCVS) and Consentius stigmatizes *tottus* long consonant versions were low class, but the Romance reflexes generally point to the etymologically correct version.

D. Janssen 1952:24 Neutralization of quantitative correlations before geminates:

Examples: *littera* ~ *lītera*,
littus ~ *lītus*,
Iuppiter < *Iūpiter*,
Maybe *mitto* ~ *mīsī*.

F. Sommer-Pfister 1977:106, 155

Formulation: When a consonant was geminated after a long vowel, the vowel was sometimes shortened.

Examples: *Iūppiter* < *Iūpiter*,
littera (Fr. *lettre*) < *litera* < *leitera*.
cippus (It. *ceppo*) < *ceipos*, vgl. CEIP(OM) CIL I² 5

Comments: No clear phonological conditioning except that the long vowel targeted for shortening must be stressed.

Many cases of geminate and singletons side by side especially in later era suggest that expressive gemination is involved, e.g. *cippus*, but hardly *littera*.

Usually one form is generalized. So *muccus*, *cippus* etc., but *bāca* (*bacca* Priscian II 47, 5) *sūcos* (SVCCOS CIL III 188, late); *parret* ~ *pāret* (Fest. 247 'in formulis') *cūpa* 'vat' and *cūpa* 'cup' with two forms specialized in two meanings.

G. Leumann 1977:183

Formulation: In the case of consonant gemination of the voiceless stops after a long vowel the vowel was probably shortened.

Comments: Romance evidence is not always available. Since long vowels from diphthongs are subject to this phenomenon, it must have happened after monophthongization, i.e. after 200 BCE.

H. Weiss 2009:144 (following in part Benedetti 1996)

Formulation: When a diphthong *ei* or *ou* is followed by a single voiceless stop, the outcome is either a long monophthong plus a single stop (e.g. **deukō* > *doukō* > *dūcō*) or a short monophthong plus geminate stop.

Examples: *Iuppiter* ~ *Iūpiter*
suppus < *soupos*, cf. Umb. *sopo-*
mittō < *meitō*
littera < *leitera*

Comments: No examples with real long vowels.

II. What is the *Iuppiter*-rule?

A. On the face of it the rule looks like an argument in favor of a CV tier of representation since it can easily be formalized in those terms:

VVC → VCC

1. But as we will see the facts are complicating.

B. Phonetic free variation? Unlikely.

1. Would a language with contrastive geminates and contrastive long vowels permit free interchange of realization?
 2. What about cases like *mūlus* 'mule' vs. *mūllus* 'mullet' the two contrasts of which are reflected in Cat. *mul* vs. *moll*.
 3. Why aren't there more examples?
- C. Irregular sound change (i.e. failed lexical acquisition)? Unlikely.
1. Unlike other typical examples.
- D. Some mixture of sound change, dialect mixture, and hypercorrection.

III. Pursuing the Sound Change Hypothesis.

- A. Collection: All sequences of V:C classified according to origin of V: and type of C.
- B. Exclusions:
1. Voiced stops and the glides are excluded because Latin does not have underlying morpheme internal voiced geminates or glides.
 2. Long vowels in derivational morphology
 3. Words with productive morpheme boundaries (*pōtus*, *crīmen*)
 4. Iconic words
 5. Retained diphthongs *au* and *ae*
 6. Original geminates that have undergone reduction *ammentum* (Old Ms.) ~ *amentum* (most Romance)
 7. Post-classical forms. Cut-off: end of 2nd century CE:

IV. Collection and Classification

- A. No occurrence after non-high vowels of any origin followed by voiceless stops:

| | p | | | t | | | k | | |
|---|---|--|----------------|--|--------------|-----------------|---|----|--------------------|
| | 1° | 2° | Uncert. | 1° | 2° | Uncert. | 1° | 2° | Uncert. |
| ā | <i>rāpum</i> , <i>scāpus</i> | | <i>pāpiliō</i> | <i>āter</i> , <i>crātis</i> <i>mātūrus</i> , <i>prātum</i> <i>vātes</i> ¹ | | <i>sātūrnus</i> | <i>ācer</i> <i>māceria</i> <i>mācerō</i> <i>pāc</i> - ² | | <i>grāculus</i> |
| ē | <i>rēpō</i> | | | <i>lētum mēta</i> <i>mētior quiēt</i> -, <i>rēte</i> ³ | <i>crēta</i> | | <i>fēcī</i> <i>iēcī</i> | | |
| ō | <i>pōpulus</i> , <i>scōpa</i> , <i>sōpiō</i> | <i>cōpia</i> <i>cōpula</i> <i>ōpiliō</i> | | | | <i>ōtium</i> | <i>ōcior</i> | | <i>cōciō crōcō</i> |

¹ With recognizable morpheme boundary: *grātus*, *lātus*, *frāter*, *māter*.

² From Gaul. *brāca*; spelling with *cc* is worthless.

³ With recognizable morpheme boundary: *cēterus*.

B. No occurrence after any vowel followed by nasal

| | 1° | 2° | Uncert. |
|----|--|---|--|
| ām | <i>clāmō, fāma lāma, rāmus, squāma</i> | <i>contāminō, trāma</i> | |
| ān | <i>ānus, grānum, iānus, lāna, māne, mānō, sānus, vānus</i> | <i>cānus, fānus, pānis</i> | <i>inānis rāna, gānea</i> |
| ēm | <i>fēmīna, sēmī-</i> | <i>tēmō, clēmēns</i> | <i>racēmus</i> |
| ēn | <i>fēnus, lēnis⁴</i> | <i>pēnis, vēnum</i> | <i>nēnia, vēna, vēnor</i> |
| ōm | | <i>cōmis, cōmō</i> | <i>pōmus, Rōma</i> |
| ōn | ----- ⁵ | <i>cōnor, pōne pōnō, vōmis</i> | <i>idōneus</i> |
| īm | <i>cīmex,</i> | <i>bīmus, līmes līmus, līmen līmax</i> | <i>īmus, līma līmus (slime), rīma, sīnus</i> |
| īn | <i>clīnō, vīnum</i> | <i>crīnis, pīnus opīnor</i> | <i>līnea, līnum</i> |
| ūm | <i>fūmus, ūmeō</i> | <i>dūmus, iūmentum lūmen, pūmiliō rūmor, pūmex spūma</i> | <i>hūmānus, plūma pūmilus, rūma</i> |
| ūn | | <i>iūnō, degūnō frūntīscor, lūna clūnis, fūnus ūnus, cūnae fūnis, mūnus</i> | <i>rūna, iūniperus</i> |

C. No occurrence after non-low vowel of any origin followed by liquid (including *r* from *s)

| | 1° | | 2° | | Uncert. |
|----|----------------------------------|------------------------------|--------------------------------------|-------------------------------|--|
| | orig. R | r < *s | orig. R | r < s | |
| ēr | <i>herēs, sērius vēr-, vērus</i> | <i>fēriae⁶</i> | <i>pōmērium</i> | | <i>fēralis, sēria</i> |
| ēl | <i>fēltx, cēlō</i> | | <i>prēlum, anhēlāre tēlum, vēlum</i> | | <i>fēlēs, vēles</i> |
| ōr | <i>mōrus, ōra plōrō</i> | <i>ōr-, rōr- mōr-, flōr-</i> | <i>cōram</i> | | <i>glōria</i> |
| ōl | <i>cōlum mōles dōlium sōlor</i> | | <i>prōles, tōles</i> | | <i>sōlus, praestōlor</i> |
| īr | <i>stīria</i> | <i>vīrus, vīr</i> | <i>dīrus, līra mīrus</i> | <i>spīrō</i> | <i>hīra</i> |
| īl | <i>fīlius</i> | | <i>bīlis, fīlum vīlis, pīla</i> | | <i>līlium, līia hīlum, mīles pīlō, īlex mīlius</i> |
| ūr | <i>dūrus obtūrō pūrus, ūrina</i> | <i>mūr-, pūr-</i> | <i>cūria, lūridus mūrus</i> | <i>rūr-, prūrīō ūrō, cūra</i> | <i>obscurus, sūra</i> |
| ūl | <i>mūlus, pūlex fuligō uligō</i> | | <i>lūlius</i> | | <i>adūlor</i> |

1. In this class there are alleged cases of the *littera* rule, but they don't stand up to scrutiny.

a. *fellō* 'suck' is well attested inscriptionally, survives in Romance⁷ and the

⁴ With recognizable morpheme boundary: *plēnus*.

⁵ With recognizable morpheme boundary: *dōnum*.

⁶ With recognizable morpheme boundary: *spērō*.

⁷ A derivative *fallatō* / *fellatō* survives in some Central-southern dialects in the meaning 'pecora giovane' but the quantity reflected by the vowel of the first unstressed syllable is not clear.

etymological source is certainly *fēlō*, but this is a good case for “affective” gemination.

- b. A byform of *fuligō*, viz. *fulligō* is attested in the glosses (CGL 2.74.11), but CGL 3.563.59 has *folliginem* and 3.612.10 has *foliginem*. This is not just a simple case of *o* for *u*, because Sardinian has Camp. *foddini* Log. *foddine* and this cannot be from *fulliginem* but only *folliginem*. The other supposed reflexes of *fulliginem* (OSp. *follin*, Sp. *hollín*, SItal. *fuddišini* (Lecce; Rohlfs 1966:310)) are ambiguous.
 - i. *fuligō* is continued in Ital. *filiggine*, Engad. *fulin*
 - ii. There is no evidence for *fulligō* in Classical Latin.
 - iii. It is a pretonic *u* and contrasts with the very solid survival of invariant *mīlus*, *pūlex* in Romance. If it is old we might have expected the *mamilla* rule to have affected it.
 - iv. Contamination with *pulligo*, *ferrugo*, *pollinem*, or *calligo*?⁸

C. High vowels (by monophthongization or original!) followed by voiceless stops show “variation”.

| | Occurrence | Non-Occurrence |
|-----|---|--|
| i:t | <i>vitta</i> | <i>lit-</i> , <i>ptuita ritus</i> , <i>titiō</i> , <i>vītis</i> ⁹ 2 <i>fitilla</i> , <i>nītor</i> , <i>vītō</i> |
| eit | <i>littera</i> ¹⁰ , <i>mittō</i> , <i>glittus</i> | <i>clitellae</i> , <i>litus</i> ¹¹ |
| i:k | ———— | <i>ficus</i> ¹² |
| eik | ———— ¹³ | <i>dicō</i> , <i>licium</i> , <i>mīca</i> , <i>pīcus</i> , <i>spīca</i> , <i>vīcus</i> , <i>īcō</i> , <i>trīcae</i> , <i>vīcenī</i> , <i>vīcus</i> |
| i:p | ———— | <i>scipiō</i> , <i>stīpō</i> ¹⁴ |
| eip | <i>cippus</i> , <i>lippus</i> | <i>rīpa</i> |
| u:p | <i>cuppa</i> | <i>cūpa</i> ¹⁵ |
| oup | <i>iuppiter</i> , ¹⁶ <i>suppus</i> , <i>cuppes</i> | |
| u:t | <i>muttō</i> ¹⁷ | <i>mūtō</i> , <i>brūtus praepūtium</i> ¹⁸ |
| out | <i>futtilis</i> , <i>guttur</i> , <i>gluttiō</i> , <i>gluttus</i> | |
| oit | | <i>mūtō</i> , <i>mūtus glūten</i> , <i>scātum</i> , <i>ūtor</i> |
| u:k | ———— | ———— ¹⁹ |
| ouk | <i>succus</i> , <i>muccus</i> , <i>tucca</i> | <i>dūcō</i> , <i>būcetum</i> , <i>būcina</i> , <i>būcula</i> , <i>lūc-</i> , <i>lūcus</i> , <i>fūcus</i> |
| oik | ———— | <i>pollūceō</i> |

⁸ See Meier 1950. There is a lot of contamination between *fuligo*, *caligo*, *aerugo*, *albugo*, *pulligo* and *aurigo*. Burdy and Brugmann 2003:55 suggest contamination of the Sardinian forms with *podđini*.

⁹ with recognizable morpheme boundary: *vīta*; of uncertain etymology: *mitis*, *invito*, *irrito*.

¹⁰ *litteris* Diom. (Keil 1.470.1) called a cretic referring to V quantity. Geminate t first in CIL 1².203.10.

¹¹ *littus* in deteriores.

¹² Of uncertain etymology: *mīca*, *licium*, *pīca*, *convicium*, *rica*, *sīca*.

¹³ Possibly *siccus* if from **seiko-* as Fortson 2008 argues. However, the evidence for a root **seik-* ‘dry’ distinct from **seik²⁰-* ‘pour’ is pretty scant. The YAv. forms *haēcah-* ‘dryness’ and *hiku-* ‘dry’ are hard to separate from the verb *us haēcāiia-* which supports the semantic development from ‘cause to pour off’ > ‘dry out’. V. 5.2. *yat us vātō zaṃ haēcāiāt* ‘until the wind dries out the earth’

¹⁴ Of uncertain etymology: *vīpera*.

¹⁵ *cūpa* ‘cask’ (Fr. *cuve*, Sp. *cuba*, is ultimately related to *cuppa* ‘cup’ (Ital. *coppa*, Fr. *coupe*, Rom. *cupa*) but they are synchronically different word. The exact etymon (**kūpa* or *koupa*) cannot be established with certainty but **kūpa* is more probable. Cf. Ved. *kāpa-* ‘pit’, OE *hýf* ‘hive’. The form *pūpa*, of uncertain etymology does show the *littera* rule (*pūpa*: Ital. *poppa*, etc.); uncertain etymology: *pūpus*, *rupes*, *scūpus*.

¹⁶ Earliest 37 CE (CIL 2.172).

¹⁷ But *muttō* could be affective gemination.

¹⁸ Of uncertain etymology: *indūtia*, *brūtis*, *confūto*, *iūturna*, *lātum*, *mūtulus*, *mūtus*.

¹⁹ Of uncertain etymology: *erūca*, *sambūcus*.

D. *ā* followed by *r* shows “variation”

| | Occurrence | Non-Occurrence | |
|-----------|----------------------|----------------|--|
| | | Original r | From s |
| <i>ār</i> | <i>narrō, parret</i> | <i>pāret</i> | <i>āra, āreō, lārua, mār</i> ^{20, 21} |

- narrō* is very difficult to explain away. Contrary to Weiss 2010:150 it seems implausible to derive *narrō* from *gnāruurō* rather than directly from *gnārus*. Furthermore, in Sardinian only the infinitive *narre* < **narVre* has a geminate. All other forms have a single *r*: *naro, naras*, etc.²²
 - Beside (*ap*)*pāret* ‘appear, obey’ there is good evidence for the form *parret*. Festus p. 262 L

Parret, quod est in formulis, debuit et producta priore syllaba pronuntiarī, et non gemino R scribi, ut fieret paret, quod est inventur; ut comparet apparet.

 - This is crucial evidence both for shortening of the *a*—from *producta priore syllaba pronuntiarī* we can infer that the incorrect pronunciation had a short *a*—and the gemination of the *r*.
 - This spelling is confirmed by inscription evidence: Tab. Contreb. (87 BCE) SEI ITA [P]ARRET EEI IVDICES IVDICENT / SALLVIENSIBUS RIVOM IVRE SVO FACERE LICER[E] SEI NON PARRET IVDICENT IVRE SVO FACERE NON LICERE ; *HEp.* 1611 (IVDEX ESTO QUIEQVIT PARRET E LEGE); EDR079322 (Pompeii, 52 CE)
- E. *ā* followed by *l* shows no certain cases

| | Occurrence | Non-Occurrence |
|-----------------|----------------------------------|--|
| 1° <i>āl</i> | <i>allium</i> ? <i>calligō</i> ? | <i>tālea, tāliō, tālis, squālus, cālīgō</i> |
| 2° <i>āl</i> | | <i>āla, māla, mālō, mālus, pālor, pālus, quālum, tālus</i> |

- Alleged cases:
 - ālium* (CIL 4.2070) beside *allium* (CIL 4.5746) attested since 1st CE could be for **alljum*. Cf. ἄλληλον . λάχανον Ἴταλοί possibly reflecting an Osc. **allo* and the stigmatized form *aleum* (Porph. Hor. *Epod.* 3.3 etc.) reflecting an incorrect restoration of the vowel.
 - Calligō* (AProb. *caligo non calligo*), is late: Romance descendents confirm *ll* but are uninformative about vowel length (Nuor. *gaddíndzu* ‘the staggers’, Port. *caligem* ‘fog’ (partly learned vs. *caigeira* ‘fog’ < **caliginaria*)

²⁰ With recognizable morpheme boundary: *cārus, rārus, clārus, gnārus, vārus; bāro, glārea* without good etymology.

²¹ Contrary to the Forcellini, OLD, and De Vaan *sariō*, sometimes written *sariō* does not have long vowel. The Romance reflexes continue a single *r*; *gariō* could be from **gariō*, but also **gariō*. Possibly also *squarrosus* connected with *squamōsus*. Of uncertain etymology: *lāridum*.

²² See Wagner 1962:156. But *naro* could be backformed from the infinitive *narre*.

F. Explanations of Alleged cases

1. Affective gemination:

flaccus, floccus, pappa, puppa, dam(m)a, tōtus (late gemination but no shortening)

2. Bad, late spelling

ālucināri (ll bad very late spelling)

bāca (Fr. *baie*, OOc. *baga*, It. *bacula*; cc spelling late)

brāca (*bracca*, late and bad spelling)

gūtus (*guttus* bad spelling, folk-etymological influence of *gutta* 'drop' Siebert 1999:32)

mantīsa (Etruscan, single example of *mantissa* (Petr. 65.10) probably corrupt, see Smith 1975:184.)

omāsum ~ *omāssum* 'ox's tripe' (Gaulish loanword; *ss* could be original (**om-astu*?), but only 1x in CGL V.377.8)

strēna (direct Romance descendents reflect single *n*; Ital. *strenna* possible from **strenwa*, Fr. *étrenne* replaces OFr. *estreine*)

3. Geminate original

anguilla (It. *anguilla*, Sard. *ambidda*, Romance evidence for singleton scant, see Corominas s.v. *anguila*)

Appenninus (*Appenninus* original; single *p* Sent. Minuc., 11. 5803 Iguvium; geminate *p* CIL 03.12576, Dacia 2nd cent., CIL 8.7961, CIL 11.1147, Veleia 2nd cent.,)

Messāla (< *Messālla* < **Messānla* cognomen given to M. Valerius Corvinus for relieving siege of *Messāna*)

mustella (ll and l pretty well attested, Romance continues *mustēla* and *mustella*, e.g. OFr. *mostoile*; Suffixwechsel; See Schaffner 2006)

flamma (*flama* CIL 1.2504a.3 defective spelling)

4. Bad etymologies

pannus (unclear if connected with Goth. *fana*, *n*-stem, perhaps **pan-n-o*-)

parricida. (no certain etymology. The single *r* spellings may simply be archaic survivals from before the introduction of geminate spellings.)

penna < **petna*

pullus < **putslo*-

stilatta 'cargo-boat' has nothing to do with *lātus* 'broad'. Instead cf. OIr. *slat* 'rod, lath', W *llath* < **slattā* (Watkins apud Joseph 1986:121)

5. Etruscan transmission

crēterra (Breyer 1993:196). Cf. *Vibenna* for Etruscan *vipina*

6. Gemination no good evidence for shortening

Supposed *cāpō* probably to be read as *cappō* (Ital. *cappone*, etc.); *capus* (assumed long but only attested in prose Varro Columella); *concupulare* shows short *a*

vacca (cognate with Ved. *vaśā*, no evidence for *ā*)

nasum probably /*nassum*/ NASSO (CIL 4.3204, 12.2778, 2960) no clear evidence for long vowel. < **nas-s-o*- derivative of *s*-stem created on analogy of other head-part words?

IV. Conclusions: there are two parallel but separate rule: the *littera* rule and the *narro* rule.

- A. The *littera* rule: A long high vowel from either an “original” long vowel or an [a back] diphthong followed by a singleton voiceless stop may be reanalyzed as a short vowel followed by a geminate voiceless consonant.
- B. The *narro* rule: a long low vowel followed by a single *r* may be reanalyzed as a short vowel followed by a geminate *r*.
- C. Why two separate rules? Any rule that would be broad enough to capture the *littera* rule and the *narro* rule would have to include everything in between a high vowel and a low vowel, and between voiceless stop and a liquid, but precisely those sequences are not affected.

V. Analysis

- A. Limitation to high vowels is paralleled in Cologne German Velarization

MHG VVT > VKK > VK but only for high vowels (Ségéral and Scheer 2001)

snûden > *fnigə*
brûn > *brun̩*
hiute > *hyk*

Contrast with retained long vowel in non-velarization contexts:

wîp > *vi:p*
hûs > *hu:s*
tiivel > *dy:vəl*

- B. Why voiceless stops?
 1. Voiceless stops are cross-linguistically the most common geminate consonant type. (Blevins 2008) In diachronic terms that means there are more pathways to them than to other sorts of geminates.
 2. Voiceless stops interact with vowels. In particular it is known that glides in English and elsewhere are more peripheral before voiceless stops. F1 is frequently lower (i.e. the glide is higher), high F2s are higher (i.e. the glide is more front) and low F2 are lower (i.e. the back glide is more back) (Moreton 2004).
- C. Gemination by preceding high vowel: LuGanda (Clements 1986)

| Lusoga | LuGanda |
|----------------|----------------|
| <i>eigumba</i> | <i>eggumba</i> |
| <i>eibeere</i> | <i>ebbeere</i> |
| <i>eifumu</i> | <i>effumu</i> |
| <i>eikumi</i> | <i>ekkumi</i> |

- D. Hypothesis: high vowels before voiceless stops were reanalyzed as diphthongs. Cf. the apparent first step in the Great Vowel Shift. The hyper-peripheral glide was then assimilated to the following stop.

IIT > IJT > ITT

1. Non-high vowels show higher F1s before voiceless consonants (i.e. they are lower) so the fact that they don't undergo the *littera* rule is predicted.

2. \bar{u} from *oi does not undergo *littera* because the pathway from *oi to \bar{u} was via *oe > \bar{o} > \bar{u} .
 3. Another trace of glide peripheralization effect may be the well-known non-lenition of voiceless stops after *au* (Sp. *poco* < *paucum*, etc.)
- E. The *narro* rule must have a different explanation in detail.
1. Pure speculation: *aar* > *aər* (cf. Breaking) > *arr* with schwa interpreted as an allophone of r.

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