

Unexpected obstruent loss in initial obstruent–sonorant clusters: an apparent example from Basque

Juliette Blevins (CUNY) & Ander Egurtzegi (IPS-LMU)

To be published as: Blevins & Egurtzegi. 2017. “Unexpected obstruent loss in initial obstruent–sonorant clusters: an apparent example from Basque”, *Phonology* 34, 507-522.

Abstract

The apparent loss of initial obstruents in Basque borrowings from Romance (e.g. *laru* << Lat. *claru*) is striking. While Proto-Basque is generally reconstructed as lacking initial clusters, the expected repair in loans, based on typology, phonology and phonetics, is copy-vowel epenthesis, not obstruent loss. Indeed, there is evidence for a vowel-copy process in Basque in other loans with obstruent–sonorant clusters (e.g. *gurutze* << Lat. *cruce*). We suggest that initial obstruent loss before /l/ but not /r/ is related to Romance developments. In the Romance varieties in contact with Basque, /fl pl bl kl gl/ all show evidence of neutralisation to /ʎ/ word-initially. We hypothesise that obstruent loss in words like Basque *laru* reflects influence from local Romance languages at a time when Basque lacked /ʎ/. In contrast, vowel copy conforming to Basque syllable structure was the norm in Romance loanwords with clusters not affected by this process.

1. The preference for OR onset clusters

The majority of work on tautosyllabic consonant clusters explains a cross-linguistic preference for obstruent-sonorant (OR) onset clusters over other cluster types in terms of the sonority hierarchy (Sievers 1881; Steriade 1982; Clements 1990; Blevins 1995; Berent 2013). Whether the sonority hierarchy adopted is the seemingly universal one shown in (1), or a more language-specific scale like those argued for in Steriade (1982) or Parker (2002), phonologists are largely in agreement on two points. First, in all spoken languages where sonority plays a role in sound patterns, sonorants (vowels, glides, liquids, nasals) are more sonorous than obstruents (fricatives, affricates, oral stops). Second, in all spoken languages where sonority plays a role in the organization of tauto-syllabic consonant clusters, the Sonority Sequencing Generalization in (2) is active.

(1) Sonority Hierarchy

vowels > glides > liquids > nasals > obstruents
HIGH SONORITYLOW SONORITY

(2) Sonority Sequencing Generalization

Between any member of a syllable and the syllable peak, a sonority rise is preferred over a sonority plateau or a sonority fall.

Obstruent-sonorant (OR) onset clusters have a rising sonority profile and this profile is claimed to be favored over sonority plateaus or sonority falls due to the universal role of the Sonority Hierarchy in determining syllable structure, as expressed by the Sonority Sequencing Generalization (SSG). In accordance with the SSG, the most common language types should be those with no consonant clusters and maximal CV₁ or CV₁C syllables, and those with consonant clusters where the majority of those are OR-onsets or RO-codas. Maori exemplifies a maximal CV₁ syllable, Gilbertese has maximal CV₁C syllables, Kokota has maximal ORV₁ syllables, and Spanish syllables are maximally ORV₁RO, with only a few exceptions involving OO codas.¹

Phonetic principles have also been invoked to arrive at deeper explanations for the widespread preference for OR onsets over other complex onsets. Release cues of obstruents that provide information on place of articulation and laryngeal features may be strongest when a vowel follows. Since sonorant consonants, especially glides and liquids, are most vowel-like in terms of their acoustic properties, they are the next-best carriers of these kinds of cues, providing some rationale for a general preference of OR vs. OO sequences (Steriade 1999; Blevins 2003, 2004:89-97).

Similar phonetic explanations account for cross-linguistic patterns in cluster resolution: when languages without consonant clusters borrow words with initial TR-onsets (T an oral stop, R a sonorant), an epenthetic vowel is typically inserted between the two consonants, while in word-initial #ST clusters (S a sibilant), a prothetic vowel precedes the sibilant (Broselow 1983, 1992a, 1992b; Fleischacker 2001, 2005; Kenstowicz 2007; Uffmann 2007, 2015; Kang 2011; Berent 2013; Broselow 2014; Uffman 2015). The general pattern is illustrated in (3) by languages from four different families: Pitjantjatjara/Yankunytjatjara, a Pama-Nyungan language of the Australian Western Desert (Goddard 1992); Rotuman, an Austronesian language of the Oceanic subgroup spoken on an isolated rocky outcrop in the Pacific (Churchward 1940); Tzotzil, a Mayan language of present day Chiapas, Mexico (Campbell 1998); and Popoluca de Texistepec, a Mixe-Zoquean language of Southern Veracruz, Mexico (Wichmann 2002). In all cases, the source language (English or Spanish) allows TR onsets, the recipient language does not, and the word is borrowed with an epenthetic vowel splitting the cluster, written here in bold.² Meanings of loanwords are roughly equivalent to those of the source lexeme.

(3) General pattern in loan phonology: #ORV >> #OVRV

| Language | Loanword | Source |
|---------------------------------------|--|---------------------------|
| | | <u>English</u> |
| a) Pitjantjatjara/ Yankunytjatjara | kalatji kilina pilangkita | glass clean blanket |

¹ These include word-final clusters like [ps] in *biceps*, and medial clusters like [ks] for those who pronounce this cluster in *expreso*. See Vaux and Wolfe (2009) for a thorough discussion of sonority violations of this kind.

² See Uffmann (2006) for a study of vowel quality in loanword epenthesis. For general approaches to loanword phonology, including other sound patterns in Basque, see Calabrese and Wetzels (2009).

| | | |
|-------------------------|-----------------|----------------|
| | purita | bread |
| | tarangka | drunk |
| | tarapula | trouble |
| b) Rotuman | keresi | grace |
| | kilaka | clerk |
| | purumu | broom |
| | paraisi | prize |
| | tarako | dragon |
| | taraku | truck |
| | | <u>Spanish</u> |
| c) Tzotzil ³ | kurus | cruz ‘cross’ |
| | pulatu | plato ‘plate’ |
| d) Popoluca | kunus | cruz |
| de Texistepec | pälääät | plato |

The languages in (3) have been chosen to rule out spelling pronunciation, or borrowing from other languages. Since literacy rates in all of these areas were low at the time of contact, spelling pronunciation is highly unlikely. Further, since Western Desert languages and Rotuman are relatively isolated, intermediate languages are an unlikely source for this loans. Finally, the regularity of the pattern within each language suggests that it is original, as do distinct features of them (e.g. Spanish tap realized as /n/ in Popoluca de Texistepec). The sample, then, appears to represent a recurrent pattern of spoken input forms with initial TR clusters being accommodated to native phonotactics through epenthesis of a cluster-splitting vowel. For more examples of the same, see the references cited in the previous paragraph.

Fleischhacker (2001, 2005) argues that the general pattern illustrated in (3) is determined by perceptual similarity: initial TR clusters are more perceptually similar to TVR than VTR, while initial ST clusters which, as she demonstrates, typically take a prothetic vowel, are more similar to VST sequences than SVT sequences. Experimental work supporting this hypothesis includes Kang (2003:221) and numerous studies summarized in Berent (2013).⁴ Broselow (2015) further suggests that the preference for anaptyctic copy vowels in OR clusters, as opposed to prothetic default vowels in ST clusters, may also result from listeners’ misinterpretation of the acoustic signal: when hearing initial clusters in the donor language, gestural overlap between the resonant and the following vowel results in misperception of a copy vowel preceding the resonant.

Nevertheless, some languages are reported to regularly resolve word-initial OR clusters in loans by deleting the first obstruent. A feature shared by all of these languages is that words and syllables cannot begin with consonant clusters. The best known example is probably Finnic due to its importance in terms of dating and reconstruction of Indo-European subgroups and their migrations, however, the pattern holds of other Uralic languages, and of several Mayan languages as well.

³ The variety of Tzotzil described by Campbell (1998) differs from Zinacantán Tzotzil, as represented by the loanword vocabulary of Brown (2009).

⁴ See Kang (2011, Section 4) for a summary of Perceptual Similarity as a component of Universal Grammar in the form of P-Maps as proposed by Steriade (2001).

(4) Unexpected and rare loan phonology: #ORV >> RV

| | | | Lost obstruents |
|-----------------------|--------------------------|--------------------------------------|-----------------|
| a. Finnish | <i>ruhtinas</i> 'prince' | << Gmc. * <i>druhtinaz</i> 'lord' | [d] |
| | <i>ranta</i> | << Gmc. <i>strand</i> 'beach' | [st] |
| | <i>risti</i> | << Old Russian <i>krīstŭ</i> 'cross' | [k] |
| | <i>luostari</i> | << Swed. <i>kloster</i> 'monastery' | [k] |
| | <i>lyijy</i> | << Swed. <i>bly</i> 'lead' | [b] |
| b. Ch'ol ⁵ | <i>rus</i> | << Spanish <i>cruz</i> 'cross' | [k] |
| | <i>lawuf</i> 'nail' | << Spanish <i>clavos</i> 'nails' | [k] |
| | <i>latu</i> | << Spanish <i>plato</i> 'dish' | [p] |
| | <i>lesia</i> (<<glesia) | << Spanish <i>iglesia</i> 'church' | [g] |

In Finnic, early Germanic loans, possibly as old as Proto-Germanic, reflect initial OR clusters as single sonorants, as illustrated in (4a), and the same is true in loans from Old Russian and Swedish (Luthy 1973; Campbell 1998:62). Note cluster simplification in Finnish reduces all OR clusters to single sonorants (*ranta* << Gmc. *strand* 'beach'), in conformity with the phonotactic that allows only simple C onsets in the language. A similar phenomenon is evident in Ch'ol (Campbell 1998:61), a Mayan language, as illustrated in (4b).

The Finnish and Ch'ol loanword adaptation patterns are unexpected for numerous reasons. Acoustic cues for the initial obstruents are expected to be stronger than those for the sonorants; maintenance of the obstruent results in a larger sonority rise (OV vs. RV), in line with Clements (1990) Sonority Cycle; loss of the initial obstruent results in massive neutralization, while retention preserves more lexical contrasts; and, finally, there is no obvious reason why these languages would not employ strategies of vowel epenthesis as some related languages do. Compare, for example Ch'ol *rus* in (4b) with Tzotzil *kurus* in (3c), both from Spanish *cruz* 'cross'.

A final well documented case of apparent initial-obstruent loss in OR clusters is found in Basque, and is the focus of this study. As illustrated in Table 1, early Basque loans assumed to be from Latin show the same kind of cluster resolution exhibited by Finnish and Ch'ol in (4): an initial OR cluster is simplified with loss of the initial obstruent, the main difference being that this process only affects OL (L a lateral) in Basque. The examples in Table 1 are taken from Michelena (1995 [1974]; 2011 [1977]) and the *General Basque Dictionary* (Michelena & Sarasola 1987-2005).

| Cluster | Latin | Basque | gloss |
|---------|----------|----------------|-------------------------|
| /pl/ | plācet | laket | it is pleasing/pleasing |
| | plānca | langa | board/gate, bar |
| | plānu(m) | lau(n) < *lanu | flat, plain |

⁵ In Ch'ol, the only initial clusters tolerated are fO clusters, where /f/ could be considered a word-level appendix (Vaux and Wolfe 2009). Ch'ol data is taken from Scharfe de Stairs (1996/2009). The last example also targets an initial cluster: in many loans, an initial unstressed syllable is lost (e.g. *cibre* << Sp. *jengibre* 'tipo de zacate; kind of long grass used as forage').

| | | | |
|------|--------------|---------|----------------------------|
| | plantātu(m) | landatu | to plant |
| | plūma | luma | feather |
| /fl/ | flamma | lama | flame |
| | flōre(m) | lore | flower |
| /kl/ | clāru(m) | laru | bright, clear/yellow, pale |
| | Claudiānu(m) | Laudio | (proper name) |
| /gl/ | glōria | loria | glory |

Table 1. Initial obstruent loss in Basque loans from Romance⁶

The remainder of this squib focuses on the Basque data in Table 1 and an explanation for it. Throughout, Basque words are written in the standard Unified Basque orthography, with IPA renderings inside square brackets, e.g. *lore* 'flower' [lore].

Before turning back to the Basque data, a brief note is in order regarding the history of the Basque language and its contact with other languages. Basque and earlier forms of Euskarian⁷ have had extensive contact with a range of Indo-European languages from the earliest historic periods. The Celts, speaking Celtic languages, are thought to have passed through the Basque country between 600 BCE and 100 CE, with evidence of their occupation in the form of Bronze Age artifacts and placenames (*Nervión*, *Deba*, *Utzama*).⁸ Pre-Roman Basque was surrounded by diverse languages, most of them Celtic: the Indo-European (presumably Celtic) language of the Cantabrians in the West, the Celtic Celtiberian in the South, the unclassified Iberian in the East and Celtic languages (Gaulish) in the North, beyond the Garonne river (De Hoz 1981; Echenique 1987:47; Gorrochategui 1995:57). Approximately 400 years later, the Roman invasion began, and from 195 BCE to the beginning of the Common Era, contact with Latin steadily increased (Gorrochategui 1995:35). This Latin influence is visible in the earliest attested Euskarian language: Aquitanian (Gorrochategui 1984). Aquitanian inscriptions are written in Latin but include Euskarian names of people and divinities, often with Latin endings and function words. The influence of Latin upon Aquitanian must have been intense at least from the campaign of P. Crassus in 56 BCE, and even before that in the case of peninsular Basque (Michelena 1995:160). Germanic tribes, including the Visigoths, are

⁶ Lower Navarrese *laustro*, which appears to be from Lat. *claustrum* 'cloister' may be a recent loan that follows the older adaptation pattern for initial clusters. If it were truly old, we would expect resolution of the medial TR cluster and final *-u* instead of the attested final *-o*.

Two instances of medial onset cluster simplification are mentioned by Michelena (1995 [1974]): *eliza* and *olata*, assumed to be from Latin *ecclēsia* 'church' and *oblāta* 'bread for offering', respectively. Both of these forms are problematic, since they show intervocalic, /l/, despite the regular *r > l / V_V sound change. As we will argue for the forms in Table 1, these words appear to be later loans from a neighboring Romance language: cf. Aragonese, Asturian and Leonese *ilesia* and Asturian *eilesia*.

⁷ The term "Euskarian", originally coined by Martinet in French (*euskarien*) is used to encompass Basque and extinct languages like Aquitanian, believed to be genetically related to it (cf. Gorrochategui 1995: 51).

⁸ *Nervión* may have the same root as *Nervii*, a Celtic-speaking Belgic tribe. *Deba*, a river name in Gipuzkoa, is from Celtic *deva* 'goddess', a common river name (cf. Belgica river names *Deve*, *Devere*, *Dieppe* < *Divisapa, etc.). *Utzama* (< *Utzama*), the name of a valley in Navarre appears to be from *uksama- < *ups-ama- 'the highest one' (Gorrochategui 2002: 107).

also known to have travelled through the Basque Country, arriving in 407 CE, with Leovigildo, Visigoth King, founding Victoriacum⁹ on or near the Basque village of Gasteiz in 581. During this period, Basque was in contact with Gothic, the earliest attested Germanic language. The Basque whaling tradition, dating from the early Middle Ages, brought Basque in contact with other Germanic languages. From the early Middle Ages to the present, influence from other Romance languages to the North and South has been continuous, and includes intense contact with Navarro-Aragonese and Gascon, and, later, Spanish and French. As a consequence, Romance loans in Basque, like those in Table 1, may be from Latin, or may postdate the evolution of descendant Romance languages.

2. Borrowed OR onset clusters in Basque

Given the general preference for OR clusters cross-linguistically, and the typical resolution of these clusters by insertion of an epenthetic vowel between the two consonants, the apparent loss of initial obstruents in the Basque borrowings in Table 1 is striking. While Proto-Basque is generally reconstructed as lacking initial clusters (Michelena 2011 [1977]; Egurtzegi 2013), the expected repair in loan words, based on the typological, phonetic, and experimental work cited above, is copy-vowel epenthesis as in (3), and not the obstruent loss in Table 1. That is, for a word like Latin GLORIA, the expected loan is Basque ***gororia* < ***goloria*, instead of attested *loria*, where intervocalic *l > r in ***gororia* is a consequence of a regular sound change occurring in the Middle Ages (Michelena 2011 [1977]). Indeed, there is evidence for just such a vowel copy process in Basque in other loans with OR clusters, as illustrated in Table 2.¹⁰ Note that these Romance clusters differ from those in Table 1 in having /l/ or /r/ as a second member. In addition, the vowel-copy process is not limited to absolute word-initial position, applying in word-medial clusters as well (*lukuru*, *liburu*).

| Cluster | Latin/Romance | Basque | gloss |
|---------|---------------------|-------------------|-----------------|
| /kl/ | cleta ¹¹ | gereta | grate, grating |
| /pr/ | L.Lat. presbyter | bereter, beretter | priest, cleric |
| /br/ | libru(m) | liburu | book |
| /fr/ | fronte(m) | boronde, boronte | forehead, front |
| /kr/ | cruce(m) | gurutze | cross |
| | lucru(m) | lukuru | profit, gain |
| | christiānu(m) | giristiño | Christian |

⁹ The toponym *Victoriacum* shows the linguistic diversity of the time: it is formed by a Latin name *victōria* and a Celtic inflection *-acum*.

¹⁰ The constraint against initial rhotics in native Basque words appears to be independent of this division in loanwords. Loans from Romance with initial /r/ are borrowed freely, usually occurring with an initial epenthetic vowel, as in B *errege* ‘king’ < Lat. *rēgem*; B *erriipa* ‘sloping ground’ Lat. *rīpam*, etc.

¹¹ Basque *gereta* is assumed to come from Gaulish *clēta* via Romance (Corominas & Pascual 1991-1997(2):99). This Basque word shows intervocalic *l > r /V_V, a sound change that took place during the Middle Ages (Michelena 2011 [1977]). Romance languages with this Celtic borrowing include Aragonese (*cleta*), Gascon (*clēda*), Catalan (*clēda*), and French (*claiē*).

| | | | |
|------|----------|--------------------|-------|
| /gr/ | grānu(m) | garau(n) < *garanu | grain |
|------|----------|--------------------|-------|

Table 2. Vowel-copy in old Basque loans with OR

We suggest that the vowel-copy strategy seen in Table 2 is the consequence of direct borrowing from local Late Latin (LLat) varieties (Väänänen 1963) into Common Basque. Since Basque did not allow initial consonant clusters, perceptually driven epenthesis applied, leading Basque speakers to hear and produce OR clusters as OVR sequences. As a consequence, Romance loans beginning in #ORV_i were borrowed with initial #OV_iRV_i sequences, and non-initial clusters were resolved by epenthesis as well as in *liburu* < *libru(m)*.

After centuries of close contact and bilingualism, the situation was different.¹² Basque speakers were familiar with the source Romance languages, and both Or and Ol clusters began to be borrowed intact with no evidence of obstruent loss or vowel copy. Basque words of this kind from different sources are shown in Table 3.

| Cluster | Basque | gloss | Source |
|---------|----------------|---------------------|--|
| /pr/ | <i>premia</i> | necessity | Spanish <i>premia</i> |
| /br/ | <i>branka</i> | proW, front of boat | Spanish <i>branca</i> |
| /pl/ | <i>plen</i> | abundant, full | Gascon <i>plen</i> |
| /bl/ | <i>bleta</i> | chard | OFr. <i>blet</i> 'grain, wheat' |
| /kr/ | <i>kristau</i> | Christian | Sp. <i>cristiano</i> |
| /kl/ | <i>kloka</i> | broody hen | * <i>klōka</i> (cf. Gascon <i>clouque</i> / <i>kluka</i>) |
| /gr/ | <i>gramu</i> | gram | Spanish <i>gramo</i> |
| /gl/ | <i>gloria</i> | glory | Spanish <i>gloria</i> |
| /tr/ | <i>tren</i> | train | Spanish <i>tren</i> |
| /dr/ | <i>droga</i> | drug | Spanish <i>droga</i> |

Table 3. Basque loans with OR clusters intact

Nevertheless, for unfamiliar words a strategy of vowel copy continued for Ol clusters into modern times. Since the loan in Table 4 postdate intervocalic *l > r, they show /l/ from the loan source.

| Cluster | Basque | gloss | Source/Comparanda |
|---------|-----------------------------|----------------------|--|
| /bl/ | <i>bulia, bilia, bili</i> | wheat/leftover wheat | Mid.Fr. <i>blé</i> |
| /kl/ | <i>bizikeleta</i> | bicycle | Spanish <i>bicicleta</i> |
| | <i>koloka</i> ¹³ | broody hen | * <i>klōka</i> (cf. Gascon <i>clouque</i> / <i>kluka</i>) |

¹² As a reviewer points out, the same is true for languages like those in (4). For example, Finnish shows both *riuna* and *kriuna* from Russian (or Old Russian) *grivna* 'a type of currency' (Mikkola 1938: 34, 55-56). We assume the same explanation proposed for Basque: that clusters may be borrowed intact when bilingualism or sustained and frequent contact is the norm.

¹³ Compare Basque *loka* (with apparent *k-loss) from Proto-Romance **klōka*, to *koloka*, *kloka* 'broody hen', which are later loans, most likely from a reflex of Proto-(Western)-Romance **klōka* (with lax *o*). The /o/ in *koloka*, *kloka* suggests borrowing from non-diphthongizing Romance varieties such as Gascon post-dating intervocalic *l > r.

| | | | |
|------|--------------------|---------|----------------------------|
| /gl/ | <i>erregela</i> | rule | Spanish <i>regla</i> |
| | <i>Ingalaterra</i> | England | Spanish <i>Ingalaterra</i> |

Table 4. Recent Basque loans with epenthesis in Ol clusters

Artiagoitia (1993) suggests that the borrowings in Tables 2-4 belong to different strata. First, Late Latin loanwords are adapted with epenthesis of a copy-vowel in the case of Or clusters and with stop deletion in the case of initial Ol clusters (though see our alternative analysis below). Later, Romance Ol clusters are adapted with vowel insertion instead of obstruent deletion, as it is the case in the examples in Table 4, thus using the expected repair method in all OR clusters. Lastly, recent and modern Basque not only borrows these clusters unaltered as shown by Table 3, but it also creates new clusters by means of metathesis, as in the adaptation of loanwords such as Sp. *turco* ‘Turkish’, *terco* ‘stubborn’, *taberna* ‘tavern’ > Basque *truku*, *treku*, *tramena* (Egurtzegi 2014).

Artiagoitia (1993: 285) proposes that the phonotactic constraint against syllable-initial clusters ends after the Middle Ages. He observes that the first attested Basque authors from the 16th century show variation in words such as *regla* and *regela* (pronounced [erregla] and [erregela], respectively), found in Leizarraga (cf. Michelena 2011 [1977]). Nevertheless, borrowings from the second half of the Middle Ages such as *Ingalaterra* ‘England’, and even a 19th century borrowing as *bizikeleta* ‘bicycle’ show adaptation by the insertion of a copy-vowel in an Ol cluster. We conclude that loan strategies reflect both Basque phonotactic constraints and the degree of familiarity with loanword phonology, often paired with multilingualism.

3. Borrowed /ʎ/-initial words in Basque

With this as background, we can now review the strange behavior of initial OR clusters in Table 1, where the second member of the cluster is /l/ in the Romance loan source. We suggest that the apparent loss of the initial obstruent is just that, apparent. These Basque words were not borrowed directly from Latin, but from Romance languages on the Iberian Peninsula that had undergone a well-documented sound change involving palatalization of inherited /Ol/ clusters. Under our reanalysis, the Basque word-initial laterals in Table 1 are nativized versions of palatal laterals in the source words.

The Romance palatalization of laterals in initial #Ol clusters has been widely discussed (cf. Lausberg 1956-62; Menéndez Pidal 1968:126; Otero 1971:309; Hartman 1974:161; Hartman 1985; Tuten 2003; Penny 2002; Schmeiser 2009). We view this regular sound change as having two distinct phases: first, the lateral in Latin/Romance #Cl clusters was produced with heavy palatalization as [ʎ] (5i).

(5) Romance lateral cluster palatalization as regular sound change

- i. $l > \lambda / \#O_$
- ii. $\#O\lambda > \lambda$ (Castilian)
- iii. $\#O\lambda > Oj > O^j > tʃ (> ʃ)$ (Galician-Portuguese)

Classical view: $O = \{p, t, k, f\}$ only

Radical view: $O = \{p, t, k, f, b\}$ or $\{p, t, k, f, b, g\}$

This stage may be in evidence in Aragonese where we find, for example, *pllou* [pɫow] 'it rains' (cf. Lat. *pluvia*), *cllau* [kɫaw] 'key' (Lat. *clāvem*), and, in some varieties *bllanco* [bɫanko] 'white', *bllat* [bɫat] 'wheat', *glloria* [gɫoria] 'glory'.¹⁴ Subsequent to this palatalization, in some languages, like Galician, delateralization and coarticulation within the cluster resulted in neutralization of all these initial clusters to a palatal consonant.¹⁵ In Castilian the output was /ʎ/ (5ii), while in Galician-Portuguese it was an alveopalatal affricate (5iii). We propose that the sound change in (5i) took place after voiceless and voiced obstruents, though many scholars argue that in Hispano- and Luso-Romance only /kl/, /pl/ and /fl/ were affected (Repetti and Tuttle 1987). A further question is whether the sound change was regular or not (Malkiel 1963-64). We discuss the status of Early Romance /bl/ and /gl/ below. For the purposes of this analysis, all that is important for Romance /kl/, /pl/ and /fl/ is that there is some plausible source of borrowing showing palatalization/cluster reduction in the specific lexeme in question.

| Cluster | Latin | Castilian | Galician |
|---------|------------------------------|-------------------------|--------------------|
| /pl/ | plorāre 'lament, weep' | llorar | chorar |
| | plānu(m) 'flat; plain' | llano, llana | cha, chan |
| | plicāre 'fold, bend; arrive' | llegar | chegar |
| | plāga 'wound' | llaga 'sore, ulcer' | chaga |
| | plantāre 'to plant' | (plantar) ¹⁶ | |
| | plūma 'feather' | (pluma) ¹⁷ | |
| /bl/ | -- | -- | -- |
| /fl/ | flamma 'flame' | llama | chama |
| | flōre(m) 'flower' | (flor) ¹⁸ | chôr ¹⁹ |
| | flōrētū(m) | Lloredo (Top.) | |

¹⁴ An anonymous reviewer suggests that Aragonese *bllanco* is not a good example of *bl* > *bɫ* because it is an early borrowing from Gallo-Romance, and may have been analogically reformed on the basis of *pllou* and *cllau*. However, see Alcover (1908-1909, Tome IV:30) where the general cluster palatalization rule is described for the Ribera Baxa del Cinca dialect to affect *bl*, *kl*, *fl*, *gl*, and *pl*, including the examples *bllat* [bɫat] 'wheat' and *glloria* [gɫoria] 'glory' cited in the text. In at least one variety of Aragonese spoken in the Pyrenees region, the dialect of Graus (Turmo 2000), there is evidence of a general sound change of *l* > *ɫ* (*bllanco* 'blanco', *abllá* 'hablar', *dobllá* 'doblar', *llabá* 'lavar', *llobo* 'lobo', etc.), also suggesting that *bllanco* could be the consequence of regular sound change.

¹⁵ See Tuten (2003:289) for a recent summary of the generally agreed upon view. Some believe that palatalization started with /kl/, and was extended by analogy to other /Ol/ clusters, since Rumanian shows palatalization of /kl/ only.

¹⁶ The popular palatalized forms *llantar* 'to plant' and *llanta* 'vegetable' existed in Old Spanish (Corominas & Pascual 1991-1997(4):573).

¹⁷ Although the conservative form prevailed, Old Sp. derivatives such as *llumazo* (Corominas & Pascual 1991-1997(4):583; cf. modern *plumazo*), show that the palatalized form existed as well.

¹⁸ Cf. the old verbal noun *lloro* in Cespedosa de Tormes (Corominas & Pascual 1991-1997(2):917).

¹⁹ Found in Trás-os-Montes Portuguese, the northernmost variety of the language which is in contact with Galician, and abundantly documented in medieval Portuguese.

| | | | |
|------|-------------------------------|----------------------|--------|
| /kl/ | clāmāre 'cry, proclaim, call' | llamar | chamar |
| | clāve(m) 'key' | llave | chave |
| | *kloka 'broody hen; cluck' | llueca ²⁰ | choca |
| /gl/ | glānde(m) 'acorn' | llande ²¹ | |
| | glattire 'beat' | latir | |

Table 5. Romance #OI > #Oλ > #C^j

Table 5 shows cases where lateral palatalization (5i) and cluster simplification (5ii, iii) are both in evidence. Note that no Latin /bl/ clusters are exemplified in Table 5. This is because Romance forms like Aragonese *bllanco* [bλanko] 'white', *bllat* [bλat] 'wheat', are generally assumed to be loans from Gallo-Romance, with these /bl/ clusters ultimately a consequence of contact with Frankish or other early Germanic languages. Indeed, if *olata* (v. *oblāta*) 'offering of bread' is eliminated from the class of old loans (see footnote 6), there are no Basque loans with initial /l/ from simplification of /bl/.

In contrast, only a weak case can be made for Early Romance #gl > #gλ. Though rare, Late Latin/Early Romance spellings with <gll> are attested. Outside of Aragonese, where this palatalization is well described (see above), one finds: a pre-1304 spelling <glloria> in a medieval Venetian text, reading <AUtissimo Re pare de glloria...>²²; a 1351 gold quarter-noble coin of Edward II with the Latin inscription EXALTABITVR IN GLLORIA, where <ll> is described as a typographical error²³; and a 15th century Venetian manuscript with the phrase <Exurge glloria Venetorum>²⁴. Given the high-frequency of Latin *gloria* (and forms derived from the same root) in religious texts, it is possible that this word may have taken on a standardized spelling, with palatalization rarely transcribed for Late Latin and Early Romance. Independent of palatalization, the position that Latin initial /gl/ clusters did undergo *g*-loss in at least some Ibero-Romance languages is widely held, and follows Menéndez Pidal (1968:127) who provided the following examples: *glandula* > *landre*; **glirōne* > *lirón*; *glattire* > *latir*; *globellu* > (*el*) **lovillo* > *el ovillo*. If /g/ was lost without lateral-palatalization, this must be seen as a sound change independent of (5i) and (5ii), and Basque *loria* 'glory' could be a direct loan from Romance after this sound change. Either way, a form occurs in Early Romance that can give rise to Basque loan forms without positing #OR > R cluster reduction in Basque loanword phonology.

²⁰ Found in the variety from Castilla La Mancha, but standard *clueca*. Basque *loka* 'broody hen' is a borrowing of Romance λoka under our analysis

²¹ Other variants include Alavese *lande* and common *glande*. Given #l > #λ in Asturian, Asturian *llande*. is non-probativ, but unlikely to be the source of the Old Castilian form.

²² The full text can be accessed at: archive.org/stream/catalogueofmedie02bein/shailor_djvu.txt

²³ Information on this coin can be found at: <https://finds.org.uk/database/artefacts/record/id/624614>

²⁴ For details of this manuscript see: medieval.bodleian.ox.ac.uk/profile/manuscript/e2c734d5-2cf8-4da2-8d56-7239390f5332

If we now return to Table 1, we see that the simplest explanation of the apparent obstruent loss is direct borrowing from a Romance language like Castilian that underwent the regular shift of Latin #Ol > #Oλ > #λ. The pathways we suggest are shown in (6), where << indicates a loan, and < the consequence of regular sound change.

(6) Basque /l/-initial loans from Romance /λ/-initial words

- a. Basque lau(n) < *lanu << *λanu < *pλanu 'flat, plain' (cf. Lat. planum)
- b. Basque lama << λama < *fλama 'flame' (cf. Lat. flamma)
- c. Basque lore << *λore < *fλore 'flower' (cf. Lat. flōrem)
- d. Basque loria << *{λ,l}oria < *g{λ,l}oria 'glory' (cf. Lat. glōria)

The palatal lateral is borrowed in these early loans as Basque /l/, not /λ/ or /j/ for two reasons. First, at the time of borrowing, neither /λ/ nor /j/ existed as contrastive phonemes in the language, but /l/ did.²⁵ Common Basque, which Michelena (1981) dates to the 5th-6th century, did not have contrastive /λ/. From the time of Common Basque onward, palatalized or palatal laterals arose from three distinct sources: internal to Basque, palatalization occurred after /i/; it also occurred as a morphological marker of diminutive sound-symbolic forms (Oñederra 1990); and a final source was (later) contact with neighboring Romance languages that had this sound. If our hypothesis above is correct, the evolution of palatalized laterals in Basque must have occurred after these loans came into the language, otherwise we would expect initial palatal laterals at this stage of Basque as well.²⁶ A second reason that Romance /λ/ was borrowed as /l/ is that this was, arguably, the perceptually closest matching phoneme in the Basque language at the time. Common Basque and its early descendants had only a single lateral /l/, and no palatal consonants. The borrowing of Romance /λ/ as Basque /l/ at this time can be compared to similar loan patterns in the Americas. For example, in Kaqchikel (Adell 2014), colonial Spanish words, which, following Canfield (1981) were still pronounced with /λ/, are borrowed as Kaqchikel (K) /l/, despite the fact that the consonant inventory of this language does have palatals /j/ and /j/: K *kaxlan* < *castellano* 'Spanish', K *kuchila* < *cuchillo* 'knife', K *lawe*, *law* < *llave* 'key', K *xila* < *silla* 'chair'.

One implication of the analysis above is that Romance forms like *λore 'flower' and either *loria or *λoria 'glory' existed on the Iberian Peninsula close to Basque speaking regions. The absence of palatalized forms in modern Castilian and Galician may reflect borrowing directly from Latin after the palatalizing sound change took place.

4. Summary

²⁵ The distribution of /j/ in Basque is highly limited, with contrastive /j/ found only in word-initial position where it usually continues *ed- (Michelena 2011 [1977]). Our working hypothesis is that Basque /l/ was perceptually the closest consonantal match to Romance /λ/ at the time of borrowing.

²⁶ Nevertheless, word-initial palatal laterals are scarce in Basque even today: most palatal laterals evolved from the palatalization of /l/ after /i/, and thus are absent from initial position. Only variants due to affective palatalization (Oñederra 1990; Hualde 2003:39) and borrowings may have introduced initial palatal laterals into the language, and some of the latter were adapted by means of feature metathesis, as in the case of Sp. *llano* >> *laño* 'modest, affable' and Sp. *llaneza* >> Basque *lañeza* 'simplicity, informality'.

In this paper we have argued that initial obstruent loss in Table 1 is only apparent. These lateral-initial words were borrowed directly from Romance languages that themselves had undergone palatalization and simplification of Latin #OI clusters. Evidence for this includes the distinct behavior of direct loans from Latin, the absence of #Or clusters in this category, the typological rarity of a loan-word process of this type, and the lack of phonetic explanation for the sound pattern. Distinct patterns of loanword nativization are related to the degree of contact between Basque and the source language. Epenthetic vowels break up clusters when speakers are less familiar with the source language, while clusters are taken intact when the language or particular lexical item is familiar. We should not be surprised that for some words, e.g. *gurutze* 'cross' (< Latin *crucem*), we find a wide range of variants including *krutze*, *grutze* and *kurtze*, with metathesis. The form with vowel epenthesis would be arguably the earliest borrowing, at a time when Basque speakers had not been exposed to much Latin²⁷, or to Christianity, while the cluster-initial forms are thought to reflect a later time when these sound patterns had become more familiar through intensive contact with Latin and other Romance languages. Indeed, a reevaluation of many Basque words thought to be Latin loans may reveal that they reflect loans from descendant Romance languages (see footnote 18).

The analysis proposed above is highly language specific and cannot be extended to the Finnish or Ch'ol loanword data discussed earlier, which are representative of more widespread patterns within Uralic and Mayan respectively. However, with the Basque examples of "obstruent loss" essentially eliminated, future study of Uralic and Mayan should bring us closer to understanding the specific conditions under which the role of sonority in cluster resolution is inactive, and to a general theory of the kinds of transforms that can occur when words of one language are adopted naively by speakers of another.

References

- Adell, Eric. 2014. A descriptive account of Spanish loanword phonology in Kaqchikel. *Kansas Working Papers in Linguistics* 34(4).
- Artiagoitia, Xabier. 1993. Syllable Structure in Modern Basque and in Proto-Basque, in J. I. Hualde & J. Ortiz de Urbina (eds.), *Generative Studies in Basque Linguistics*, 263-287.
- Berent, Iris. 2013. *The Phonological Mind*. Cambridge: CUP.
- Blevins, Juliette. 1995. The Syllable in Phonological Theory, *Handbook of phonological theory*, ed. by John Goldsmith, Basil Blackwell, London, 206-44.
- Blevins, Juliette. 2003. The independent nature of phonotactic constraints: an alternative to syllable-based approaches. In C. Féry and R. van de Vijver (eds.). *The syllable in optimality theory*. Cambridge: Cambridge University Press. 375-403.
- Blevins, Juliette. 2004. *Evolutionary phonology: The emergence of sound patterns*. Cambridge: Cambridge University Press.
- Broselow, Ellen. 1983. Nonobvious transfer: On predicting epenthesis errors. In L. Selinker and S. Gass (eds.), *Language Transfer in Language Learning*, 269-280.

²⁷ In fact, the final consonant of Basque *gurutze*, a laminal affricate, suggests borrowing from a post-Latin Romance language in which velar-palatalization occurred prior to borrowing.

- Rowley, MA: Newbury House. Reprinted in G. Ioup and S. Weinberger (eds.), 1987, *Interlanguage Phonology*, 292-304. Cambridge, MA: Newbury House.
- Broselow, Ellen. 1992a. Transfer and universals in second language epenthesis. In S. Gass and L. Selinker (eds.), *Language Transfer in Language Learning* (Revised edition), 71-86. Rowley, MA: Newbury House.
- Broselow, Ellen. 1992b. The structure of fricative-stop onsets. Unpublished manuscript, Stony Brook University.
- Broselow, Ellen. 2015. The typology of position-quality interactions in loanword vowel insertion. In Y. Hsiao and L-H. Wee (eds.) *Capturing Phonological Shades*, 292-319. Cambridge Scholars Publishing.
- Brown, Cecil H. 2009. Vocabulary Zinacantán Tzotzil. In Haspelmath & Tadmor (eds.).
- Calabrese, Andrea & W. Leo Wetzels. 2009. *Loan phonology*. Amsterdam & Philadelphia: John Benjamins.
- Campbell, Lyle. 1998. *Historical Linguistics: An Introduction*. Cambridge, MA: MIT Press.
- Canfield, D. Lincoln. 1952. Spanish American data for the chronology of sibilant changes. *Hispania* 35: 25-30.
- Churchward, C. Maxwell. 1940. *Rotuman grammar and dictionary*. Sydney: Methodist Church of Australasia.
- Clements, G. N., 1990. "The Role of the Sonority Cycle in Core Syllabification." In John Kingston & M. Beckman, eds., *Papers in Laboratory Phonology I*, Cambridge: Cambridge University Press, Cambridge, MA, pp. 283-333.
- Corominas, Joan & Pascual, José A., 1991–1997. *Diccionario crítico etimológico castellano e hispánico*. Madrid: Gredos.
- De Hoz, Javier, 1981. "El euskera y las lenguas vecinas antes de la romanización" in Tovar, A. et al. (ed.) *Euskal linguistika eta literatura: bide berriak*, Bilbao: Deustuko Unibertsitatea, 27-56.
- Echenique, María Teresa. 1987. *Historia lingüística vasco-románica*. Madrid: Paraninfo.
- Egurtzegi, Ander. 2013. "Phonetics and Phonology", in Mikel Martinez-Areta (ed.), *Basque and Proto-Basque: Language-Internal and Typological Approaches to Linguistic Reconstruction* [Mikroglottika 5], Frankfurt am Main: Peter Lang, 119-172.
- Egurtzegi, Ander. 2014. *Towards a phonetically grounded diachronic phonology of Basque*. Doctoral dissertation, University of the Basque Country.
- Fleischhacker, Heidi. 2001. Cluster-dependent epenthesis asymmetries. In A. Albright and T. Cho (eds.), *UCLA Working Papers in Linguistics 7, Papers in Phonology 5*: 71-116.
- Fleischhacker, Heidi Anne. 2005. *Similarity in Phonology: Evidence from reduplication and loanword adaptation*. Unpublished doctoral dissertation UCLA.
- Goddard, Cliff (compiler). 1992. *Pitjantjatjara/Yankunytjatjara to English Dictionary*. Alice Springs: Institute for Aboriginal Development.
- Gorrochategui, Joaquín. 1984. *Estudio sobre la onomástica indígena de aquitania*, Bilbao: University of the Basque Country, University of Salamanca.
- Gorrochategui, Joaquín. 1995. "The Basque Language and its Neighbors in Antiquity" in J. I. Hualde, J. A. Lakarra & R. L. Trask (eds.), *Towards a History of the Basque Language*, 31-63.

- Gorrochategui, Joaquín. 2002. “El área de Bilbao en la antigüedad”. In: Arejita, A., Elejabeitia, A., Isasi, C. & Otaegi, J. (eds.) Bilbao. El espacio lingüístico. Simposio 700 Aniversario / Bilboren 700. Urteurrena. Hizkuntza gunea. Sinposioa. Bilbao: University of Deusto. 103-120.
- Hartman, Steven Lee. 1974. An outline of Spanish historical phonology. *Papers in Linguistics* 7:123-191.
- Hartman, Steven Lee. 1985. Latin *-nge-* and *-ng'ʎ-*. In L. D. King and C. A. Maley (eds.), *Selected Papers from the XIIIth Linguistic Symposium on Romance Languages*. Amsterdam: John Benjamins. 149-62.
- Haspelmath, Martin & Tadmor, Uri. (eds.) 2009. World Loanword Database. Leipzig: Max Planck Institute for Evolutionary Anthropology (Available online at <http://wold.cld.org>, accessed on 2016-02-27).
- Hoole, Philip, Lasse Bombien, Marianne Pouplier, Christine Mooshammer, and Barbara Kühnert (eds.). 2012. *Consonant Clusters and Structural Complexity*. Berlin: Mouton de Gruyter.
- Hualde, J. I., 2003. “Segmental phonology”, in J.I. Hualde & J. Ortiz de Urbina (eds.), *A grammar of Basque*, Berlin & New York: Mouton de Gruyter, 15-65.
- Johnson, Chuck. 2006. An etymological exploration of foodstuffs and utensils: The sociolinguistic fortune of culinary terms of *Apicus' De Re Coquinaria*. Phd dissertation, University of North Carolina, Chapel Hill.
- Kang, Yoonjung. 2003. Perceptual similarity in loanword adaptation: English postvocalic word-final stops in Korean. *Phonology* 20:219-273.
- Kang, Yoonjung. 2011. Loanword Phonology. In M. van Oostendorp, C. Ewen, E. Hume, and K. Rice (eds.), *The Blackwell Companion to Phonology*. Wiley-Blackwell, 2258-2282.
- Kenstowicz, Michael. 2007. Saliency and similarity in loanword adaptation: a case study from Fijian. *Language Sciences* 29:316-340.
- Lausberg, Heinrich. 1956-62. *Romanische Sprachwissenschaft*. 4 volumes. Berlin: Walter de Gruyter. [Spanish translation, 1965. *Lingüística románica*, Madrid.]
- Luthy, Melvin J. 1973. *Phonological and Lexical Aspects of Colloquial Finnish*. Uralic and Altaic Series 119. Bloomington: Indiana University Publications.
- Malkiel, Yakov. 1963-4. The interlocking of narrow sound change, broad phonological pattern, level of transmission, areal configuration, sound symbolism: Diachronic studies in the Hispano-Romance consonant clusters *cl-*, *fl-*, *pl-*. *Archivum Linguisticum* 15:144-173, 16:1-33.
- Martinet, André. 1950 [1974]. “La reconstrucción estructural: las oclusivas del vasco”, in *Economía de los cambios fonéticos. Tratado de fonología diacrónica* (translated from the original version in French: (1955): *Économie des changements phonétiques*). Madrid: Gredos, 524-550.
- Menéndez Pidal, R. 1968. *Manual de gramática histórica española*. 13th edition. Madrid: Espasa-Calpe.
- Michelena, Luis. 2011 [1977]. *Fonética histórica vasca*, 2nd ed. San Sebastián: Diputación Foral de Guipúzcoa [1961, 2nd ed. 1977]; reissued in J.A. Lakarra & Í. Ruiz Arzalluz (eds.), *Luis Michelena. Obras Completas*.
- Michelena, Luis. 1981. “Lengua común y dialectos vascos”, *International Journal of Basque Linguistics and Philology [ASJU]* 15, 291-313.

- Michelena, Luis. 1995 [1974]. "The Latin and Romance element in Basque" in Hualde, Lakarra & Trask (eds.), *Towards a History of the Basque Language*, 137-169.
- Michelena, Luis & Ibon Sarasola, 1987-2005, *Orotariko Euskal Hiztegia [General Basque Dictionary]* (16 vols.), Bilbao: Euskaltzaindia
[<http://www.euskaltzaindia.net/oeh/>, accessed on 18-02-2016].
- Mikkola, J. J. 1938. *Die älteren Berührungen zwischen Ostseefinnisch und Russisch*. Helsinki: Suomalais-Ugrilainen Seura.
- Oñederra, Miren Lourdes. 1990. *Euskal fonologia. Palatalizazioa, asimilazioa eta hots simbolismoa*, Zarautz: University of the Basque Country.
- Otero, Carlos-Peregrín. 1971. *Evolución y revolución en romance*. Barcelona: Seix Barral.
- Parker, Stephen G. 2002. *Quantifying the sonority hierarchy*. PhD dissertation, Linguistics Department, University of Massachusetts, Amherst.
- Penny, Ralph. 2002. *A history of the Spanish language*. Cambridge: CUP.
- Repetti, Lori & Edward F. Tuttle. 1987. The evolution of Latin PL, BL, FL, and CL, GL in Western Romance. *Studi Mediolatini e Volgari* 33:53-115.
- Scharfe de Stairs, Emily F. (ed.) 1996/2009. *Tumbalá Ch'ol Dictionary, Chiapas, with dialectal variations from Tila and Sabanilla*. SIL. 3rd Edition (electronic).
- Sievers, Eduard. 1881. *Grundzüge der Phonetik*. Leipzig: Breitkopf and Hartel.
- Schmeiser, Benjamin. 2009. A gestural account of Latin obstruent + lateral onset cluster realizations in Galego-Portuguese. *Textos Seleccionados. Encontro Nacional da Associação Portuguesa de Linguística*, Lisboa, APL: 497-509.
- Steriade, Donca. 1982. *Greek prosodies and the nature of syllabification*. PhD diss., MIT, Cambridge, MA.
- Steriade, Donca. 1999. Alternatives to syllable-based accounts of consonantal phonotactics. In O. Fujimura, B. Joseph and B. Palek (eds.) *Proceedings of the 1998 Linguistics and Phonetics Conference: Item Order in Language and Speech*, 205-42. Prague: Karolinum Press.
- Steriade, Donca. 2001. Directional asymmetries in place assimilation: A perceptual account. In E. Hume and K. Johnson (eds.), *The role of speech perception in phonology*. San Diego: Academic Press. 219-50.
- Turmo Mur "Pallasón", Vicente. 2000. *Tradizions y cosas de Graus*. Serie Historia, Centro de Creación y Cultura del Pirineo.
- Tuten, Donald N. 2003. *Koineization in Medieval Spanish*. Berlin and New York: De Gruyter.
- Uffmann, Christian. 2006. Vowel epenthesis in loanwords: empirical and formal issues. *Lingua* 116: 1079-111.
- Uffmann, Christian. 2007. *Vowel epenthesis in loanword adaptation*. Tübingen: Niemeyer.
- Uffmann, Christian. 2015. Loanword adaptation. In Patrick Honeybone and Joseph Salmons (eds.), *The Oxford Handbook of Historical Phonology*. Oxford: Oxford University Press, 644-65.
- Vaux, Bert & Andrew Wolfe. 2009. The appendix. In E. Raimy and C. Cairns (eds.), *Contemporary Views on Architecture and Representations in Phonology*. Cambridge: MIT Press, 101-143.
- Väänänen, Veikko. 1963. *Introduction au Latin Vulgaire*. Paris: Klincksieck.

Wichmann, Søren. 2002. *Diccionario Analítico del Popoloca de Texistepec*. Ciudad Universitaria: Universidad Nacional Autónoma de México.