CrossMark

Phonology **34** (2017) 507–522. © Cambridge University Press 2017
doi:10.1017/S0952675717000264

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

Juliette Blevins
The Graduate Center, City University of New York

Ander Egurtzegi
Ludwig Maximilians University, Munich

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 obstruent–sonorant onset clusters

The majority of work on tautosyllabic consonant clusters explains a cross-linguistic preference for obstruent–sonorant (OR) onset clusters over other

* E-mail: JBLEVINS@GC.CUNY.EDU, EGURTZEGI@PHONETIK.UNI-MUENCHEN.DE.
An early version of this paper was presented at the CUNY Phonology Forum 2016 Conference on Sonority. We are grateful to the audience there, as well as *Phonology* reviewers and editors, for comments and corrections. This research has been partially funded by the Endangered Language Initiative of the Graduate Center, CUNY, and, for the second author, by the Spanish MINECO (FFI2016-76032-P; FFI2015-63981-C3-2; FJCI-2014-21348), the Basque Government (IT769/13) and the Alexander von Humboldt Foundation.

Symbols used in this paper are as follows: >, < = 'changes to, from'; >>, << = 'borrowed into, from'; * = 'reconstructed form'; ** = 'expected, but unattested historical form'.

https://doi.org/10.1017/S0952675717000264 Published online by Cambridge University Press

cluster types in terms of the sonority hierarchy (Sievers 1881, Steriade 1982, Clements 1990, Blevins 1995, Berent 2013).

(1) *Sonority hierarchy*

vowels > glides > liquids > nasals > obstruents

high sonority ——————————— *low sonority*

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 organisation of tautosyllabic consonant clusters, the Sonority Sequencing Generalisation in (2) is active.

(2) *Sonority Sequencing Generalisation* (SSG)

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

OR onset clusters have a rising sonority profile, and this profile is claimed to be favoured 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 Generalisation. In accordance with the SSG, the most common language types should be those with no consonant clusters and maximal CV or CVC syllables, and those with consonant clusters where the majority are OR onsets or RO codas. Maori exemplifies a maximal CV syllable, Gilbertese maximal CVC and Kokota maximal ORV, while Spanish syllables are maximally ORVRO, 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 for 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 = oral stop), an epenthetic vowel is typically inserted between the two consonants, while in word-initial #ST

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

https://doi.org/10.1017/S0952675717000264 Published online by Cambridge University Press

clusters (S = sibilant), a prothetic vowel precedes the sibilant (Broselow 1983, 1992, 2015, Fleischhacker 2001, 2005, Kenstowicz 2007, Uffmann 2007, 2015, Kang 2011, Berent 2013). The general pattern is illustrated in (3) by languages from four different families: (a) Pitjantjatjara/Yankunytjatjara, a Pama-Nyungan language of the Australian Western Desert (Goddard 1992), (b) Rotuman, an Austronesian language of the Oceanic subgroup spoken on an isolated rocky outcrop in the Pacific (Churchward 1940), (c) Tzotzil, a Mayan language of present-day Chiapas, Mexico (Campbell 1998)[2] and (d) 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, while the recipient language does not, and the word is borrowed with an epenthetic vowel (underlined) splitting the cluster.[3] Meanings of loanwords are roughly equivalent to those of the source lexeme.

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

language	*loanword*	*source*	
a. Pitjantjatjara/ Yankunytjatjara	k<u>a</u>latji	Eng.	glass
	k<u>i</u>lina		clean
	p<u>i</u>langkita		blanket
	p<u>u</u>rita		bread
	t<u>a</u>rangka		drunk
	t<u>a</u>rapula		trouble
b. Rotuman	k<u>e</u>resi	Eng.	grace
	k<u>i</u>laka		clerk
	p<u>u</u>rumu		broom
	p<u>a</u>raisi		prise
	t<u>a</u>rako		dragon
	t<u>a</u>raku		truck
c. Tzotzil	k<u>u</u>rus	Sp.	cruz 'cross'
	p<u>u</u>latu		plato 'dish'
d. Popoluca de Texistepec	k<u>u</u>nus	Sp.	cruz
	p<u>ä</u>läät		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 these loans. Finally, the regularity of the pattern within each language suggests that it is original, as do certain distinct features (e.g. Spanish /ɾ/

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

[3] 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 & Wetzels (2009).

https://doi.org/10.1017/S0952675717000264 Published online by Cambridge University Press

realised 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, 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 perceptually more similar to TVR than VTR, while initial ST clusters which, as she demonstrates, typically take a prothetic vowel, are more similar to VST than to SVT sequences. Experimental work supporting this hypothesis includes Kang (2003: 221) and numerous studies summarised 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 they hear 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.

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

	language	*loanword*	*source*		*lost obstruents*
a.	Finnish	ruhtinas	Gmc	*druhtinaz 'lord'	[d]
		ranta	Gmc	strand 'beach'	[st]
		risti	Old Russ.	křĭstŭ 'cross'	[k]
		luostari	Sw.	kloster 'monastery'	[k]
		lyijy	Sw.	bly 'lead'	[b]
b.	Ch'ol[5]	rus	Sp.	cruz 'cross'	[k]
		lawuʃ	Sp.	clavos 'nails'	[k]
		latu	Sp.	plato 'dish'	[p]
		lesia << glesia	Sp.	iglesia '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

[4] See Kang (2011: §4) for a summary of perceptual similarity as a component of Universal Grammar in the form of P-maps proposed by Steriade (2001).

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

https://doi.org/10.1017/S0952675717000264 Published online by Cambridge University Press

the same is true in loans from Old Russian and Swedish (Luthy 1973, Campbell 1998: 62). Note that cluster simplification in Finnish reduces all OR clusters to single sonorants (*ranta* ≪ Gmc *strand*), in conformity with the phonotactic constraint that allows only simple C onsets in the language. A similar phenomenon is evident in Ch'ol (Campbell 1998: 61), 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 neutralisation, 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*.

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 (5), 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 = lateral) in Basque. The examples in (5) are taken from Michelena (1976, 1995) and Michelena & Sarasola (1987–2005).[6]

(5) *Initial obstruent loss in Basque loans from Romance*

cluster	*Latin*	*Basque*	
/pl/	plācet	laket	'(to be) pleasing'
	plānca	langa	'board, bar'
	plānu(m)	lau(n) < *lanu	'flat, plain'
	plantātu(m)	landatu	'to plant'
	plūma	luma	'feather'
/fl/	flamma	lama	'flame'
	flōre(m)	lore	'flower'
/kl/	clāru(m)	laru	'bright, clear/yellow'
	Claudiānu(m)	Laudio	(proper name)
/gl/	glōria	loria	'glory'

[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): *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 (5), these words appear to be later loans from a neighbouring Romance language: cf. Aragonese, Asturian and Leonese *ilesia* and Asturian *eilesia*.

https://doi.org/10.1017/S0952675717000264 Published online by Cambridge University Press

The remainder of this squib focuses on the Basque data in (5) and an explanation for it. Throughout, Basque words are given in the standard Unified Basque orthography, with IPA transcriptions where appropriate, e.g. *lore* [loɾe] 'flower'.

Before we consider the data, a brief note is in order regarding the history of the Basque language and its contact with other languages. From the earliest historical periods, Basque and earlier forms of Euskarian have had extensive contact with a range of Indo-European languages.[7] Speakers of 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 artefacts and place-names (*Nervión*, *Deba*, *Ulzama*).[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 (Gaulish) languages in the north, beyond the Garonne river (De Hoz 1981, Echenique Elizondo 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 also known to have travelled through the Basque Country, arriving in 407 CE, with Leovigildo, the Visigoth king, founding Victoriacum (formed by a Latin name *victōria* and a Celtic inflection *-acum*) 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 into contact with other Germanic languages. From the early Middle Ages to the present day, influence from other Romance languages to the North and South has been continuous, with intense contact with Navarro-Aragonese and Gascon, and, later, Spanish and French. As a consequence, Romance loans in Basque like those in (5) may be from Latin, or postdate the evolution of descendant Romance languages.

[7] The term 'Euskarian', originally coined by Martinet (1955) 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. Belgic river names *Deve*, *Devere*, *Dieppe* < *Divisapa, etc.). *Ultzama* (< *Utzama*), the name of a valley in Navarre, appears to be from *uksama- < *ups-ama- 'the highest one' (Gorrochategui 2002: 107).

https://doi.org/10.1017/S0952675717000264 Published online by Cambridge University Press

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 (5) is striking. While Proto-Basque is generally reconstructed as lacking initial clusters (Michelena 1976, Egurtzegi 2013), the expected repair in loanwords, on the basis of typological, phonetic and experimental work cited above, is copy-vowel epenthesis, as in (3), rather than the obstruent loss in (5). 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 1976). Indeed, there is evidence for just such a vowel-copy process in Basque in other loans with OR clusters, as illustrated in (6).[9] Note that these Romance clusters have /l/ as well as /r/ as the second member, unlike (5). In addition, the vowel-copy process is not limited to absolute word-initial position, applying in word-medial clusters as well (*lukuru, liburu*).

(6) *Vowel copy in old Basque loans*

cluster	*Latin/Romance*	*Basque*	
/kl/	cleta[10]	g̲ereta	'grate, grating'
/pr/	presbyter	b̲ereter, b̲eretter	'priest, cleric'
/br/	libru(m)	libu̲ru	'book'
/fr/	fronte(m)	b̲oronde, b̲oronte	'forehead, front'
/kr/	cruce(m)	g̲urutze	'cross'
	lucru(m)	luku̲ru	'profit, gain'
	christiānu(m)	g̲iristiño	'Christian'
/gr/	grānu(m)	g̲arau(n) < *g̲aranu	'grain'

We suggest that the vowel-copy strategy seen in (6) is the consequence of direct borrowing from local Late Latin 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 with #ORV$_i$ were borrowed with initial #OV$_i$RV$_i$ sequences, and non-initial clusters were also resolved by epenthesis, as in *liburu* < *libru*(*m*).

[9] 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 *errege* 'king' < Lat. *rēgem*, *erripa* 'sloping ground' < Lat. *rīpam*, etc.

[10] 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 1976). Romance languages with this Celtic borrowing include Aragonese (*cleta*), Gascon (*cleda*), Catalan (*cleda*) and French (*claie*).

https://doi.org/10.1017/S0952675717000264 Published online by Cambridge University Press

After centuries of close contact and bilingualism, the situation was different.[11] 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 (7).

(7) *Basque loans with* OR *clusters intact*

cluster			*source*	
/pr/	premia	'necessity'	Sp.	premia
/br/	branka	'prow'	Sp.	branca
/pl/	plen	'abundant'	Gasc.	plen
/bl/	bleta	'chard'	OFr.	blet 'grain'
/tr/	tren	'train'	Sp.	tren
/dr/	droga	'drug'	Sp.	droga
/kr/	kristau	'Christian'	Sp.	cristiano
/gr/	gramu	'gram'	Sp.	gramo
/kl/	kloka	'broody hen'	*klɔka (cf. Gasc. *clouque* /kluka/)	
/gl/	gloria	'glory'	Sp.	gloria

Nevertheless, for unfamiliar words the strategy of vowel copy continued for /Ol/ clusters into modern times. Since the loans in (8) postdate intervocalic *l > /r/, they show /l/ from the loan source.

(8) *Recent Basque loans with epenthesis in* /Ol/ *clusters*

cluster			*source*	
/bl/	bulia, bilia, bili	'wheat'	MFr.	blé
/kl/	bizikeleta	'bicycle'	Sp.	bicicleta
	koloka[12]	'broody hen'	*klɔka (cf. Gasc. *clouque*)	
/gl/	erregela	'rule'	Sp.	regla
	Ingalaterra	'England'	Sp.	Inglaterra

Artiagoitia (1993) suggests that the borrowings in (6)–(8) 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 in the examples in (8), thus using the expected repair method in all OR clusters. Lastly, Basque has more recently not

[11] 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.

[12] Compare Basque *loka* (with apparent *k-loss), from Proto-Romance *klɔka, to *koloka*, *kloka*, which are later loans, most likely from a reflex of Proto-(Western) Romance *klɔka (with lax /ɔ/). The /o/ in *koloka*, *kloka* suggests borrowing from non-diphthongising Romance varieties such as Gascon, postdating intervocalic *l > /r/.

https://doi.org/10.1017/S0952675717000264 Published online by Cambridge University Press

only borrowed these clusters unaltered, as shown by (7), but has also created 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 texts from the 16th century show variation in words such as *regla* [erregla] and *regela* [erregela], found in Leizarraga (cf. Michelena 1976). Nevertheless, borrowings from the second half of the Middle Ages such as *Ingalaterra* 'England', and even the 19th-century borrowing *bizikeleta* 'bicycle', show adaptation by 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 behaviour of the initial OR clusters in (5), 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 palatalisation of inherited /Ol/ clusters. Under our reanalysis, the Basque word-initial laterals in (5) are nativised versions of palatal laterals in the source words.

The Romance palatalisation of laterals in initial #/Ol/ clusters has been widely discussed (cf. Lausberg 1956–62, Menéndez Pidal 1968: 126, Otero 1971: 309, Hartman 1974: 161, 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 palatalisation, as [ʎ] (9a).

(9) *Romance lateral cluster palatalisation as regular sound change*

a. l > ʎ / #O__ b. i. #Oʎ > ʎ (Castilian)

ii. #Oʎ > Oj > O^{j} > ʧ (> 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* [pʎow] 'it rains' (cf. Lat. *pluvia*), *cllau* [kʎaw] 'key' (Lat. *clāvem*), and, in some varieties *bllanco* [bʎanko] 'white', *bllat* [bʎat] 'wheat', *glloria* [gʎoria] 'glory'.[13] Subsequent to this palatalisation, in some languages,

[13] An anonymous reviewer suggests that Aragonese *bllanco* is not a good example of /bl/ > /bʎ/, 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

https://doi.org/10.1017/S0952675717000264 Published online by Cambridge University Press

for example Galician, delateralisation and coarticulation within the cluster resulted in neutralisation of all these initial clusters to a palatal consonant.[14] In Castilian the output was /ʎ/ (9b.i), while in Galician-Portuguese it was an alveopalatal affricate (9b.ii). We propose that the sound change in (9a) took place after voiceless and voiced obstruents, though many scholars argue that in Hispano- and Luso-Romance only /kl pl fl/ were affected (Repetti & 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 fl/ is that there is some plausible source of borrowing showing palatalisation or cluster reduction in the specific lexeme in question.

(10) *Romance* #Ol > #Oʎ > #ʎ, #ʧ

cluster	*Latin*	*Castilian*	*Galician*	
/pl/	plorāre	llorar	chorar	'lament, weep'
	plānu(m)	llano, llana	cha, chan	'flat, plain'
	plicāre	llegar	chegar	'fold, arrive'
	plāga	llaga	chaga	'wound, sore'
	plantāre	(plantar)		'to plant'
		> OSp. llantar		
	plūma	(pluma)		'feather'
		> OSp. lluma(zo)		
/bl/	—	—		
/fl/	flamma	llama	chama	'flame'
	flōre(m)	(flor)	chôr	'flower'
		> OSp. llor(o)	> Port. chôr	
	flōrētu(m)	Lloredo		(name (top.))
/kl/	clāmāre	llamar	chamar	'proclaim, call'
	clāve(m)	llave	chave	'key'
	*kloka	llueca	choca	'broody hen'
		> Non-St. llueca		
/gl/	glānde(m)	llande		'acorn'
		> Asturian llande		
	glattire	latir		'beat'

(1908–09: 30), where the general cluster-palatalisation rule is described for the Ribera Baxa del Cinca dialect as affecting *bl*, *kl*, *fl*, *gl* and *pl*, including *bllat* [bʎat] and *glloria* [gʎoria]. In at least one variety of Aragonese spoken in the Pyrenees region, the dialect of Graus (Turmo Mur 'Pallason' 2000), there is evidence of a general sound change of /l/ > /ʎ/ (compare Aragonese *bllanco* 'white', *abllá* 'talk', *dobllá* 'fold', *llabá* 'wash' and *llobo* 'wolf' with Spanish *blanco*, *hablar*, *doblar*, *lavar* and *lobo*), also suggesting that *bllanco* could be the consequence of regular sound change.

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

https://doi.org/10.1017/S0952675717000264 Published online by Cambridge University Press

(10) shows cases with both lateral palatalisation (9a) and cluster simplification (9b). Note that no Latin /bl/ clusters are exemplified in (10). This is because Romance forms like Aragonese *bllanco* [bʎanko] and *bllat* [bʎat] 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* (*vs*. *oblāta*) 'offering of bread' is eliminated from the class of old loans (see note 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/ > #/gʎ/. Though rare, Late Latin/Early Romance spellings with <gll> are attested. Outside of Aragonese, where this palatalisation is well described (see above), we find: a pre-1304 spelling <glloria> in a medieval Venetian text, reading <AUtissimo Re pare de glloria…>; a 1351 gold quarter-noble coin of Edward II with the Latin inscription EXALTABITVR IN GLLORIA, where <ll> is described as a typographical error; and a 15th-century Venetian manuscript with the phrase <Exurge glloria Venetorum>. 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 standardised spelling, with palatalisation rarely transcribed for Late Latin and Early Romance. Independent of palatalisation, 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 provides the following examples: *glandula* > *landre*; **glirōne* > *lirón*; *glattire* > *latir*; *globellu* > (*el*) **lovillo* > *el ovillo*. If /g/ was lost without lateral palatalisation, this must be seen as a sound change independent of (9a) and (9b.i), and Basque *loria* 'glory' could be a direct loan from Romance after this sound change. In either case, a form occurs in Early Romance that can give rise to Basque loan forms without positing #OR > R cluster reduction in Basque loanword phonology.

If we now return to (5), 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/ > #/Oʎ/ > #/ʎ/. The pathways we suggest are shown in (11).

(11) *Basque* /l/*-initial loans from Romance*/ʎ/*-initial words*

lau(n) < *lanu << *ʎanu < *pʎanu	cf. Lat. planu(m)	'flat, plain'
lama << ʎama < *fʎama	flamma	'flame'
lore << *ʎore < *fʎore	flōre(m)	'flower'
loria << *{ʎ,l}oria < *g{ʎ,l}oria	glōria	'glory'

The palatal lateral is borrowed in these early loans as Basque /l/, not /ʎ/ or /j/, for two reasons. First, at the time of borrowing, neither /ʎ/ nor /j/ existed as contrastive phonemes in the language, but /l/ did.[15] Common

[15] The distribution of /j/ in Basque is highly limited, with contrastive /j/ found only in word-initial position (it is usually reconstructed as *ed-) (Michelena 1976). Our working hypothesis is that Basque /l/ was perceptually the closest consonantal match to Romance /ʎ/ at the time of borrowing.

https://doi.org/10.1017/S0952675717000264 Published online by Cambridge University Press

Basque, which Michelena (1981) dates to the 5th–6th century, did not have contrastive /ʎ/. From the time of Common Basque onward, palatalised or palatal laterals arose from three distinct sources: (i) internal to Basque, palatalisation occurred after /i/; (ii) it also occurred as a morphological marker of diminutive sound-symbolic forms (Oñederra 1990); and (iii) a final source was (later) contact with neighbouring Romance languages that had this sound. If our hypothesis above is correct, the evolution of palatalised 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.[16] A second reason that Romance /ʎ/ was borrowed as /l/ is that this was, arguably, the perceptually closest matching phoneme in Basque at the time. Common Basque and its early descendants had only a single lateral /l/, and no palatal consonants. The borrowing of Romance /ʎ/ 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, according to Canfield (1981), were still pronounced with /ʎ/ are borrowed as /l/, despite the fact that the consonant inventory of Kaqchikel does have the palatals /j/ and /ʃ/: *kaxlan* < *castellano* 'Spanish', *kuchila* < *cuchillo* 'knife', *lawe*, *law* < *llave* 'key', *xila* < *silla* 'chair'.

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

4 Summary

In this paper we have argued that initial obstruent loss in (5) is only apparent. These lateral-initial words were borrowed directly from Romance languages that themselves had undergone palatalisation and simplification of Latin #/Ol/ clusters. Evidence for this includes the distinct behaviour of direct loans from Latin, the absence of #/Or/ clusters in this category, the typological rarity of a loanword process of this type and the lack of phonetic explanation for the sound pattern. Distinct patterns of loanword nativisation 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 adopted 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*,

[16] Nevertheless, word-initial palatal laterals are scarce in Basque even today: most palatal laterals evolved from the palatalisation of /l/ after /i/, and thus are absent from initial position. Initial palatal laterals may have been introduced into the language only by variants arising from 'affective palatalisation' (Oñederra 1990, Hualde 2003: 39) and borrowings, and some of these were adapted by means of feature metathesis, as in the case of *laño* 'modest, affable' << Sp. *llano* and *lañeza* 'simplicity, informality' << Sp. *llaneza*.

https://doi.org/10.1017/S0952675717000264 Published online by Cambridge University Press

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 Latin[17] or to Christianity, while the cluster-initial forms may reflect a later period, when these sound patterns had become more familiar through intensive contact with Latin and other Romance languages. Indeed, a re-evaluation of many Basque words thought to be Latin loans may reveal that they reflect loans from descendant Romance languages.

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 transformations 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**. https://doi.org/10.17161/KWPL.1808.12862.

Alcover, Antoni M. (1908–09). *Bolletí del diccionari de la llengua Catalana*. Vol. 4. Palma de Mallorca: Estampa de ca'n Amengual y Muntaner. Available (August 2017) at https://alcover.iec.cat.

Artiagoitia, Xabier (1993). Syllable structure in Modern Basque and in Proto-Basque. In José Ignacio Hualde & Jon Ortiz de Urbina (eds.) *Generative studies in Basque linguistics*. Amsterdam & Philadelphia: Benjamins. 263–287.

Berent, Iris (2013). *The phonological mind*. Cambridge: Cambridge University Press.

Blevins, Juliette (1995). The syllable in phonological theory. In John A. Goldsmith (ed.) *The handbook of phonological theory*. Cambridge, Mass. & Oxford: Blackwell. 206–244.

Blevins, Juliette (2003). The independent nature of phonotactic constraints: an alternative to syllable-based approaches. In Caroline Féry & Ruben 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 Susan M. Gass & Larry Selinker (eds.) *Language transfer in language learning*. Rowley, Mass.: Newbury House. 269–280.

Broselow, Ellen (1992). Transfer and universals in second language epenthesis. In Susan M. Gass & Larry Selinker (eds.) *Language transfer in language learning*. Revised edn. Amsterdam & Philadelphia: Benjamins. 71–86.

Broselow, Ellen (2015). The typology of position-quality interactions in loanword vowel insertion. In Yuchau E. Hsiao & Lian-Hee Wee (eds.) *Capturing phonological*

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

https://doi.org/10.1017/S0952675717000264 Published online by Cambridge University Press

shades within and across languages. Newcastle upon Tyne: Cambridge Scholars Publishing. 292–319.
Brown, Cecil H. (2009). Vocabulary Zinacantán Tzotzil. In Martin Haspelmath & Uri Tadmor (eds.) *World loanword database*. Leipzig: Max Planck Institute for Evolutionary Anthropology. Available (August 2017) at http://wold.clld.org.
Calabrese, Andrea & W. Leo Wetzels (eds.) (2009). *Loan phonology*. Amsterdam & Philadelphia: Benjamins.
Campbell, Lyle (1998). *Historical linguistics: an introduction*. Cambridge, Mass.: MIT Press.
Canfield, D. Lincoln (1981). *Spanish pronunciation in the Americas*. Chicago: University of Chicago Press.
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 & Mary E. Beckman (eds.) *Papers in laboratory phonology I: between the grammar and physics of speech*. Cambridge: Cambridge University Press. 283–333.
Corominas, Joan & José A. Pascual (1991–97). *Diccionario crítico etimológico castellano e hispánico*. 6 vols. Madrid: Gredos.
De Hoz, Javier (1981). El euskera y las lenguas vecinas antes de la romanización. In Antonio Tovar, Koldo Mitxelena Elissalt, Jacques Allières, Jean Haritschelhar & José Luis Alvarez Enparantza Txillardegi (eds.) *Euskal linguistika eta literatura: bide berriak*. Bilbao: Deustuko Unibertsitatea. 27–56.
Echenique Elizondo, 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*. Frankfurt am Main: Peter Lang. 119–172.
Egurtzegi, Ander (2014). *Towards a phonetically grounded diachronic phonology of Basque*. PhD dissertation, University of the Basque Country.
Fleischhacker, Heidi (2001). Cluster-dependent epenthesis asymmetries. *UCLA Working Papers in Linguistics* **7**: *Papers in Phonology* **5**. 71–116.
Fleischhacker, Heidi (2005). *Similarity in phonology: evidence from reduplication and loan adaptation*. PhD dissertation, University of California, Los Angeles.
Goddard, Cliff (1992). *Pitjantjatjarra/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.
Gorrochategui, Joaquín (1995). The Basque language and its neighbors in antiquity. In Hualde *et al*. (1995). 31–63.
Gorrochategui, Joaquín (2002). El área de Bilbao en la antigüedad. In Ana Elejabeitia Ortuondo, Juan Otaegi, Adolfo Arejita, Carmen Isasi Martínez & Nagore Etxebarria (eds.) *Bilbao: el espacio lingüístico*. 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). On opening black boxes: Latin *-nge-* and *-ng'l-* in Hispano-Romance. In Larry D. King & Catherine A. Maley (eds.) *Selected papers from the 13th linguistic symposium on Romance languages*. Amsterdam & Philadelphia: Benjamins. 149–162.
Hualde, José Ignacio (2003). Segmental phonology. In José Ignacio Hualde & Jon Ortiz de Urbina (eds.) *A grammar of Basque*. Berlin & New York: Mouton de Gruyter. 15–65.
Hualde, José Ignacio, Joseba A. Lakarra & R. L. Trask (eds.) (1995). *Towards a history of the Basque language*. Amsterdam & Philadelphia: Benjamins.

https://doi.org/10.1017/S0952675717000264 Published online by Cambridge University Press

Kang, Yoonjung (2003). Perceptual similarity in loanword adaptation: English post-vocalic word-final stops in Korean. *Phonology* **20**. 219–273.
Kang, Yoonjung (2011). Loanword phonology. In Marc van Oostendorp, Colin J. Ewen, Elizabeth Hume & Keren Rice (eds.) *The Blackwell companion to phonology*. Malden, Mass.: Wiley-Blackwell. 2258–2282.
Kenstowicz, Michael (2007). Salience and similarity in loanword adaptation: a case study from Fijian. *Language Sciences* **29**. 316–340.
Lausberg, Heinrich (1956–62). *Romanische Sprachwissenschaft*. 4 vols. Berlin: de Gruyter.
Luthy, Melvin J. (1973). *Phonological and lexical aspects of Colloquial Finnish*. Bloomington: Indiana University.
Malkiel, Yakov (1963–64). The interlocking of narrow sound change, broad phonological pattern, level of transmission, areal configuration, sound symbolism: diachronic studies in the Hispano-Latin consonant clusters *cl-*, *fl-*, *pl-*. *Archivum Linguisticum* **15**. 144–173. **16**. 1–33.
Martinet, André (1955). La reconstruction structurale: les occlusives du basque. In André Martinet. *Économie des changements phonétiques: traité de phonologie diachronique*. Berne: Francke. 524–550.
Menéndez Pidal, R. (1968). *Manual de gramática histórica española*. 13th edn. Madrid: Espasa-Calpe.
Michelena, Luis (1976). *Fonética histórica vasca*. 2nd edn. San Sebastián: Diputación de Guipúzcoa.
Michelena, Luis (1981). Lengua común y dialectos vascos. *Anuario del Seminario de Filología Vasca 'Julio de Urquijo'* [*International Journal of Basque Linguistics and Philology*] **15**. 291–313.
Michelena, Luis (1995) The Latin and Romance element in Basque. In Hualde *et al.* (1995). 137–169.
Michelena, Luis & Ibon Sarasola (1987–2005). *Orotariko Euskal hiztegia*. [*General Basque dictionary*.] 16 vols. Bilbao: Euskaltzaindia.
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 sinbolismoa*. Bilbao: 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, University of Massachusetts, Amherst.
Penny, Ralph (2002). *A history of the Spanish language*. 2nd edn. Cambridge: Cambridge University Press.
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.) (2009). *Tumbalá Ch'ol Dictionary, Chiapas, with dialectal variations from Tila and Sabanilla*. 3rd edn. Available (August 2017) at http://www.mexico.sil.org/es/resources/archives/35328.
Schmeiser, Benjamin (2009). A gestural account of Latin obstruent + lateral onset cluster realizations in Galego-Portuguese. *Textos Seleccionados. XXIV Encontro Nacional da Associação Portuguesa de Linguística*. Lisbon: Associação Portuguesa de Linguística. 497–509.
Sievers, Eduard (1881). *Grundzüge der Phonetik, zur Einführung in das Studium der Lautlehre der indogermanischen Sprachen*. Leipzig: Breitkopf & Härtel.
Steriade, Donca (1982). *Greek prosodies and the nature of syllabification*. PhD dissertation, MIT.

https://doi.org/10.1017/S0952675717000264 Published online by Cambridge University Press

Steriade, Donca (1999). Alternatives to syllable-based accounts of consonantal phonotactics. In Osamu Fujimura, Brian Joseph & Bohumil Palek (eds.) *Item order in language and speech*. Prague: Karolinum. 205–242.
Steriade, Donca (2001). Directional asymmetries in place assimilation: a perceptual account. In Elizabeth Hume & Keith Johnson (eds.) *The role of speech perception in phonology*. San Diego: Academic Press. 219–250.
Turmo Mur 'Pallasón', Vicente (2000). *Tradizions y cosas de Graus*. Graus: Centro de Creación y Cultura del Pirineo.
Tuten, Donald N. (2003). *Koineization in Medieval Spanish*. Berlin & New York: De Gruyter.
Uffmann, Christian (2006). Epenthetic vowel quality in loanwords: empirical and formal issues. *Lingua* **116**. 1079–1111.
Uffmann, Christian (2007). *Vowel epenthesis in loanword adaptation*. Tübingen: Niemeyer.
Uffmann, Christian (2015). Loanword adaptation. In Patrick Honeybone & Joseph C. Salmons (eds.) *The Oxford handbook of historical phonology*. Oxford: Oxford University Press. 644–665.
Väänänen, Veikko (1963). *Introduction au latin vulgaire*. Paris: Klincksieck.
Vaux, Bert & Andrew Wolfe (2009). The appendix. In Eric Raimy & Charles E. Cairns (eds.) *Contemporary views on architecture and representations in phonology*. Cambridge, Mass.: MIT Press. 101–143.
Wichmann, Søren (2002). *Diccionario analítico del Popoluca de Texistepec*. Ciudad Universitaria: Universidad Nacional Autónoma de México.

https://doi.org/10.1017/S0952675717000264 Published online by Cambridge University Press