A gestural approach to Latin /pl, fl, kl/ cluster realizations in Galego-Portuguese and Sardinian

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Abstract

Among Romance languages, Galego-Portuguese and Sardinian are the only languages that replace the lateral with a rhotic from a Latin /pl, fl, kl/ onset cluster, as in (1):
(1) Latin: ECCLESIA English: 'church'
Portuguese: [i. ˈgɾe. ʒa]/Galician: igrexa [i. ˈgɾe. ʃa]
Sardinian: crexia [ˈkɾe. ʃia]
The current study greatly adds to the field by addressing this unique environment in Romance languages in two distinct ways: first, it offers a historical analysis, which includes treating apparent exceptions. Second, it discusses the phenomenon using both a gestural approach (i.e. Articulatory Phonology) and Phase Windows for both languages.

Keywords: Galego-Portuguese, Sardinian, consonant clusters, articulatory gestures

Introduction

Romance languages are a group of languages that have evolved from (Vulgar) Latin. There are *at least* fourteen, and they are often classified by the five 'major' languages (Spanish, Italian, French, Portuguese, and Romanian), and the remaining as 'regional' languages. In (2) below:

(2) Romance languages
(a) Spanish (b) Italian
(c) French (d) Portuguese
(e) Romanian (f) Occitan
(g) Provençal (h) Gallego
(i) Romansch (j) Catalan
(k) Sardinian (l) Navarro-Aragonese
(m) Astur-Leonese (n) Neopolitan

The reader will note that, for the purpose of the current discussion, Gallego (also referred to as 'Galician') and Portuguese are combined here ('Galego-Portuguese'), given that they are from the same family (Galician-Portuguese) historically and evolved similarly for the phenomenon discussed here. They later evolved into separate languages by the 14th century.

Sardinian is indeed its own language and not a dialect of Italian. Sardinian is the language spoken on the island of Sardinia, which is Italy's second largest island (Sicily being the largest). Sardinian is known for, among other things, its conservative evolution from Latin.

Word-Initial complex onsets in Latin

The following table shows the obstruent + liquid sequences in Latin for the word-initial environment. On the left side, one observes that Latin had three voiceless stops, three voiceless stops, and the voiceless labiodental fricative. More relevant to our discussion here is the right side, which contains the possible obstruent + lateral sequences; note there are no examples of a dental stop, followed by a lateral. In addition, given the space constraints of here, the current study is confined to the possible voiceless obstruents (/pl/, /kl/, and /fl/) as shaded in blue. Rhotacization does indeed occur in /bl/ sequences in Galego-Portuguese (e.g. branco from Late Latin blancus 'white'), however I did not find any examples of this sequence in Sardinian. The current study then, is devoted to the voiceless environment; future research should consider the /bl/ environment in more detail.

Table 1. Word-initial Latin complex onsets.

For /r/-:			For /l/-:		
Obstruent	Example	English gloss	Obstruent	Example	English gloss
/b/	brācchĭu	'arm'	/b/	blandu	'bland'
/d/	drăco	'dragon'	/d/	-	
/g/	grŏssu	'large'	/g/	glūten	'glue'
/p/	prātu(m)	'meadow'	**/p/**	**plānu**	**'flat'**
/t/	trahĕre	'to bring'	/t/	-	-
/k/	crēdĕre	'to believe'	**/k/**	**clamāre**	**'to call'**
/f/	frŏnte	'front'	**/f/**	**flamma**	**'flame'**

The topic merits further study because rhotacization in obstruent + lateral word-initial clusters is unique to Galego-Portuguese and Sardinian. For example, notice that for a word like Latin *ecclesia* 'church' e[kl]ésia, it evolves into Catalan: es[gl]ésia, French: é[gl]ise, Italian: [kj]esa, but crucially Portuguese: i[gɾ]eja/ Galician: i[gɾ]exa and Sardinian: [kɾ]esia

Rhotacization in Galego-Portuguese and Sardinian

In what follows, we observe in (3) how word-initial /pl/, /fl/, and /kl/ clusters undergo rhotacization during the evolution from Latin to Galego-Portuguese and Sardinian:

(3) Galego-Portuguese

a. Latin [pl]- PLATTUS → b. [pɾ]ato 'plate'
c. Latin [fl]- FLACCUS → d. [fɾ]aco 'weak'
e. Latin [kl] ECCLESIA → f. i[gɾ]eja / i[gɾ]exa 'church'

Sardinian

g. Latin [pl] PLUS → h. [pɾ]us 'more'
i. Latin [fl] FLAMMA → j. j. [fj]amma /[fɾ]ada 'flame'
k. Latin [kl] ECCLESIA → l. [kɾ]esia 'church'

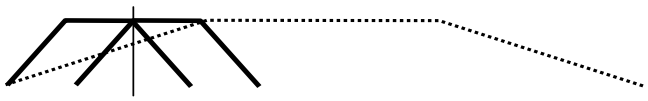
In terms of word transmission, the above word sample, though admittedly small, might suggest that a tendency is for popular and semi-learned words to undergo rhotacization, whereas learned words would likely not undergo this process.

Articulatory phonology

Articulatory Phonology (Browman and Goldstein 1992) is an approach rooted in basic units called gestures (see below) that represent the smallest unit of phonological representation. Major articulators produce constrictions in the vocal tract, varying in their constriction degree and exact location to form a gesture. In the case of consonant clusters, each consonantal gesture has a timing relationship with the other consonantal gesture and also with the underlying vowel (Gafos 2002).

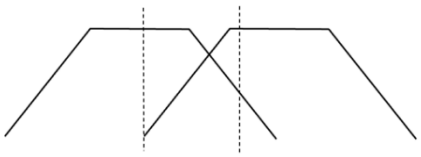
Lexical representation specifies the requisite gestures and specifies which gestures are to be coordinated. Coordination between associated gestures is assumed to be variable but constrained to particular ranges specific to the types of gestures involved (e.g. C to C); it acts to limit the temporal compressibility or disassociation of gestures, which is useful for capturing the timing variability observed in the coordination of these gestures.

With specific regard to Galego-Portuguese and Sardinian, the Phase Window (Byrd 1994, 1996b) limited the cluster in terms of gestural overlap of the two consonant gestures. For the current analysis, the two gestures overlap within the Phase Window, however the gesture representing the lateral was realized with more overlap. For the current analysis, the two gestures overlap within the Phase Window, however the gesture representing the lateral was realized with more overlap. In Gafos's (2002) alignment terms, C2's target aligns with C1's release, as in:



Less distance between the two consonants is allowed because the lateral is markedly different in its articulatory realization: laterals involve an additional gesture whereby the sides of the tongue are lowered as to allow for lateral air release.

Taps lack this additional gesture and are shorter in duration, therefore, diachronically when a lateral loses the additional gesture, decreases in duration, and moves further away from the C1 as noted by the presence of an intrusive vowel, it is reinterpreted as a rhotic tap. That is, in Galego-Portuguese and Sardinian, there was a timing restriction in the Phase Window in which the C2's onset aligns with C1's c-center, as in:



Conclusions

The current study considered how the word was brought into the language by illustrating modifications in gestural timing and their consequent effect on the evolution of popular and semi-learned words in both languages.

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