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**The /r/ which Dies Hard –  
A Diachronic Look at the Developments of the Rhotic  
Sound in Selected Celtic, Germanic and Romance  
Languages**

**ABSTRACT**

Phonetically, the archetypal rhotic /r/ is a coronal speech sound that is often half-way between consonants and vowels, usually acting in words as a consonant syllable-wise. Its positional and structural functions in selected languages are described here from a diachronic perspective.

Keywords: position, structure, rhotic, theory

**1. Introduction**

Phonetically, the archetypal rhotic /r/ is a coronal speech sound that is half-way between consonants and vowels, usually acting in words as a consonant syllable-wise. It may also assume a syllabic function, e.g. *krk* – ‘neck’ in Czech and *smrt* – ‘death’ in Serbo-Croatian. Rhotics, or *r*-like sounds, can appear in different shapes and sizes in the world’s languages and have been widely discussed in the literature (e.g., Gimson 1980; Carr 1993; Ladefoged and Maddieson 1996;

Wiese 1996; Schiller 1998). Below, we can see examples of *r*-like sounds in selected Indo-European languages:

- (1)
- a. alveolar trill [r], Polish [trup] *trup* ‘dead body’,<sup>1</sup> Spanish [koral] *corral* ‘corral’
  - b. alveolar tap [ɾ], Spanish [koral] *coral* ‘coral’
  - c. uvular fricative [ʁ], French [paʁi] *Paris*
  - d. central approximant [ɹ], English, although in most dictionaries it is shown as phonetic [r]
  - e. uvular trill [R], German, although it is sometimes transcribed as the uvular fricative /ʁ/ or simply /r/

Ladefoged and Maddieson (1996: 215) claim that neither the place nor the manner of articulation make the rhotics special. However, these sounds tend to “occupy privileged places in the syllable structure of different languages” (Ladefoged and Maddieson 1996: 216).

In this paper, without going too far into phonetic detail, we will focus on some historical developments of the Proto-Indo-European /r/ in selected Celtic, Germanic and Italic languages with a view to finding reasons why this rhotic, unlike most other speech sounds, has frequently been immune to any type of weakening.

The organization of this article is as follows. First, we will take a look at the hypothetical developments of the archetypal rhotic in the reconstructed protolanguages of Eurasia. Next, we will briefly consider the behaviour of /r/ in certain Celtic, Germanic and Romance languages from the viewpoint of Government Phonology (e.g. Kaye, Lowenstamm and Vergnaud 1990; Harris 1994) as well as two of its daughter frameworks proposed by Cyran (2003) and Scheer (2004).

## 2. /r/ in the earliest languages

According to a hypothesis developed by Dolgopolsky (2008: 49-83), a proto-tongue called Proto-Nostratic was used in Eurasia around 15,000-12,000 BC and subsequently developed into other proto

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<sup>1</sup> Recent laboratory tests indicate that the *r*-like sound in Polish, unless produced in isolation, is phonetically a tap rather than a trill (Zajac and Rojczyk 2017).

systems, such as, e.g. Indo-European, Afro-Asiatic, Uralic, Altaic, Dravidian, Kartvelian. Two *r*-like phonemes are assumed to have occurred in this reconstructed language: /r/ and /r<sup>j</sup>/. Both were allegedly coronal and one of them was palatalized (Dolgopolsky 2008: 8). In the ensuing sections we will take a look at the development of the rhotic in Proto-Indo-European (PIE) and later.

### 3. /r/ in PIE times

A less hypothetical proposal is that, roughly, in the tenth or eighth millennium BC a protolanguage referred to as Proto-Indo-European started to be used in the steppes of today's Ukraine, Russia and in South Asia. According to the directions of the migrations of its subsequent users it developed over the next few millennia into a wide range of proto-tongues such as Indo-Iranian, Anatolian, Albanian, Hellenic (Greek), Romance (Italic/Latino), Germanic, Balto-Slavic, Celtic, etc. It appears that PIE had only one type of /r/ (Dolgopolsky 2008: 14; Matasović 2009: 5).

### 4. /r/ in selected post-PIE sound systems

As for the diachronic developments of Celtic, Romance and Germanic languages, various weakening processes involving many consonants can be detected over centuries. They affected typically obstruents, although resonants were not completely invulnerable (Reszkiewicz 1973; Lahiri 1982; Kortlandt 1986; McCone 1996; Jaskuła 2006; Scheer and Ségéral 2008).

Obstruents were often deleted in the course of time, generally in consonant clusters. On the other hand, the liquid /r/ usually remained immune to that deletion, e.g.:

(2)

Lat. *\*dacrīma/lacrīma*<sup>2</sup> > Sp. *lágrima* but Fr. *larme* – 'tear'

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<sup>2</sup> This change of /d/ > /l/ is noted in e.g. Holmes and Schutz (1928). It should also be kept in mind that French and other Romance/Italic/Latino languages did not derive in a straightforward fashion from Classical Latin spoken by the well-educated citizens of Rome but, rather, from the so-called Vulgar Latin, that is, from regional varieties of

Lat. *matris* (gen.) > Sp. *madre* but Fr. *mère* – ‘mother’  
 Proto-Celtic \**dakr* > Mid. Welsh *dagrau* (pl.), but Old Ir. *dér* – ‘tear’  
 Proto-Germanic \**tagr* > Old Eng. *tear* – ‘tear’  
 Lat. *nigro* > Sp. *negro* but Fr. *noir*, Ita. *nero* – ‘black’  
 Proto-Germanic \**khreng-* > Old Eng. *hring* Modern *ring* – ‘ring’<sup>3</sup>  
 Lat. *cordis* (gen.) > Catalan *cor*, Ita. *cuore*, Fr. *cœur* – ‘heart’  
 Proto-Germanic \**markh-* > Old Eng. *mare* – ‘female horse’

Sonorants are, by and large, less likely to be weakened (Carvalho 2008) and yet /r/ seems a singularity among them. Obviously, other sonorants also took part in similar developments but, unlike /r/, they sometimes underwent deletion too, e.g.:

(3)

a. sonorant loss

Proto-Germanic \**fimf* > Old Eng. *fif* – ‘five’  
 Proto-Germanic \**gans* > Old Eng. *gōs* – ‘goose’  
 Proto-Celtic \**gansis* > Old Ir. *géis* – ‘goose’  
 Old Eng. *half* > Mod. Eng. *half* with silent [l] (in most Modern English dialects)  
 Lat. *talpa* > Fr. *taupe* – ‘mole’<sup>4</sup>  
 Proto-Celtic \**dwor-* > Old Ir. *dorus* – ‘door’  
 Proto-Germanic \**dōmjan* > Old Eng. *dēman* – ‘deem’  
 Old Eng. *corn* > Mod. Eng. *corn* with silent [r] only in non-rhotic dialects

b. obstruent loss

Old Ir. *cland* > Mod. Ir. *clann* – ‘family’  
 Old Ir. *imb* > Mod. Ir. *im* – ‘butter’

As we can see in (3a), the sonorants could be deleted irrespective of their position in the cluster, since they could occupy the slot of both C1 and C2 to get elided. /r/ usually remained safe, though. The only context in which it seems to be deleted (or remain silent) is the

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this ancient language. The peoples conquered by the Romans were obliged to know and use that type of Latin officially.

<sup>3</sup> In some languages, e.g. English, clusters of consonants underwent metathesis at early stages of development (see, e.g., Czaplicki 2013). This fact may have had some impact on the behaviour of /r/ in non-rhotic dialects.

<sup>4</sup> Regarding the changes between Vulgar Latin and Old/Middle French, the situation of /r/ is slightly unclear and will be addressed near the end of this paper.

position of C1 in clusters and exclusively in non-rhotic dialects of Modern English. In other sound systems /r/ could even help to develop an additional consonant, e.g. Lat. *ten(e)ru* > Fr. *tendre* – ‘tender’ (Carvalho 2008: 219). Obviously, there are also cases in which neither sonorants nor obstruents undergo deletion, e.g. PIE \**kerd-* > Pr.-Germ. \**hert-* > Mod. Dutch *hart*, Mod. Germ. *Herz*, Mod. Eng. *heart* (rhotic dialects).

The phonetic developments of the archetypal /r/ may seem to belong to the area of evolution and may be dealt with by the Evolutionary Phonology model (e.g. Blevins 2004). We are not going to follow this path here. The perspective of Government Phonology (e.g., KLV 1990; Harris 1994) and some of its daughter frameworks (e.g., Cyran 2003; Scheer 2004) may provide some clues regarding the immunity of this rhotic to reduction or deletion in history. It should be borne in mind, though, that the ensuing discussion does not provide a comprehensive analysis and is but a look at the behaviour of /r/ in terms of structural and positional strength.

#### 5. Structural strength of segments in GP

From the perspective of Government Phonology (e.g., KLV 1990; Harris 1994) as well as from the viewpoint of some of its daughter frameworks (e.g., Cyran 2003), the strength of segments is expressed in terms of element complexity, i.e. the stronger the segment, the more elements it includes. Consequently, stronger segments can govern the weaker ones, /r/ belonging to the latter group. Strength of segments is expressed in terms of elements – the stronger the speech sound, the more elements it has. Obstruents have many elements, while sonorants have fewer primes, e.g.:

- (4)  
 a. strong      English /p/ = {U, ʔ, h, H}, /f/ = {U, h, H}, French /b/ = {U, ʔ, h, L}<sup>5</sup>

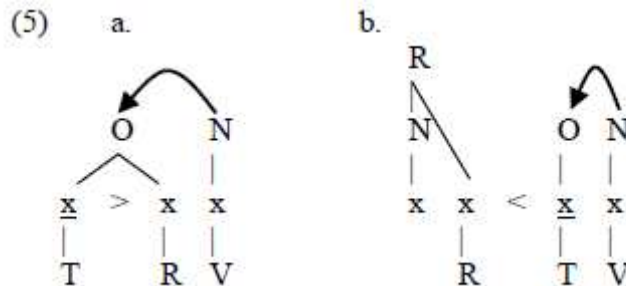
<sup>5</sup> In these structures the elements {I, A, U} represent palatal, coronal and labial places of articulation, respectively, {H} stands for voicelessness, {L} for voicedness, {N} for nasality, {h} for noise, while {ʔ} equals stopness/occlusion.

b. weak      /m/ = {U, N}, /j/ = {I}, /w/ = {U}, /r/ = {A}

By these standards, the strongest segments are stops, followed by fricatives and nasals, while glides and liquids are the weakest. This classification is an element-based reflection of a well-accepted sonority hierarchy found in e.g. Trask (1996).

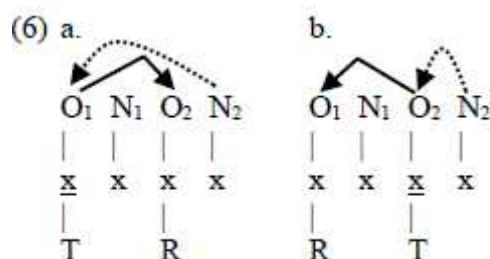
6. Strength by position in GP and in Cyran (2003)

In standard Government Phonology, where asymmetric relations of government between segments in a phonetic string are recognized, the second segment in branching onsets is weaker and governed by the first, while the first consonant in coda-onset sequences is a governee too. The diagrams below provide an illustration of possible governing relations in which the governors are underlined and the direction of government is indicated by arrows (<, >).



Above we can see a branching onset (5a), where the obstruent (T) governs a resonant (R) and the direction of government is from left to right. In (5b) a coda-onset group is depicted and the governor is attached to the onset, whereas the governee to the rhyml complement slot, the direction of government being from right to left. In both (5a) and (5b) we also see an important part of the theory, that is licensing, which is indicated by curved arrows. In both cases the sonorant is in a weaker position. Seen in this light, the immunity of *r*-like sounds n clusters seems hard to explain.

In the more recent model of Complexity Scales and Licensing (Cyran 2003, 2010), no branching constituents are recognized, so only ONON sequences are assumed to constitute words. Here, instead of branching onsets and coda-onset groups, inter-onset (IO) relations are proposed to hold.



In (6a) we can see a left inter-onset governing relation (LIO), where the obstruent attached to (O<sub>1</sub>) governs the resonant under (O<sub>2</sub>). In (6b) a right inter-onset control (RIO) is shown. We can also observe that both RIO and LIO are government-licensed by the nuclei following the relations. In (6a) the licensing is indirect, since the licensing nucleus (N<sub>2</sub>) is not in the immediate neighbourhood of the governor (O<sub>1</sub>), while in (6b) it is direct as the licenser is in the vicinity of the governing (T). Also here the sonorant is always in so-called positional plight and its resistance to weakening is not fully understandable.

#### 7. Strength by position in Scheer's (2004) model

In Scheer's model of Lateral Theory of Phonology (2004), liquids could be governors, but only in 'branching onsets'. Without going into too much detail, when an obstruent (T) is followed by a resonant (R), the latter may govern the former, while in a reverse situation no government between the two is recognized. What matters much more for this model is the so-called strength by position understood in a fashion which somehow differs from what was presented above and which can refer to a few clearly specified contexts. A weak consonant

usually occurs in the Coda, while a strong one finds itself in the Coda Mirror, i.e. in a position which is a mirror reflection of a coda. Let us consider these situations of importance schematized below (Ségéral and Scheer 2008: 486):

- (7)
- |                 |       |                 |
|-----------------|-------|-----------------|
| strong position |       |                 |
| a.              | #_V   | (word-initial)  |
| b.              | VC_#V | (post-coda)     |
| weak position   |       |                 |
| c.              | V_#CV | (internal coda) |
| d.              | V_#   | (final coda)    |
| e.              | V_#V  | (intervocalic)  |

If we apply these assumptions to the data shown in (2) and (3) above, /r/ is strong in *matris* > *madre* (7b) but weak in *\*kerd* > *hert* (7c) and yet there is no difference in its behaviour. Thus, this theory partly deals with the issue of *r*-immunity to lenition or deletion.

If we consider the immunity of /r/ to weakening processes, theoretical predictions are usually against that type of strength. And yet /r/, one of the theoretically weakest speech sounds, survived numerous prehistoric lenitions, while its alleged governors did not.

#### 8. A theoretical intermezzo – word-final position generally

In the three approaches presented above, that is standard GP, Cyran (2003) and Scheer (2004), the weakest positions for /r/ to occur are those before a consonant or word-finally, i.e. in the coda. What should also be mentioned is that all these frameworks assume that every word in every language phonologically ends in a nucleus and all of them recognize empty nuclei, which are vowels with no melodic content. As a consequence of such an assumption, if a word is phonetically consonant-final, it contains also an empty nucleus at the end. A position before an empty nucleus is also perceived as weak. Irrespective of the theory, word-final is a context where things happen to speech sounds and any sort of deletion is not a novelty.



### 9. An interim conclusion

If we now consider the languages exemplified above, only the non-rhotic varieties of Modern English show a real reduction of /r/, since it fails to be pronounced in a coda followed by an onset, e.g. [ba:k] *bark*, or word-finally, e.g. [wɪntə] *winter*. The situation in the other languages considered here is more complicated than it seems at first glance, though.

### 10. Recent findings in the diachronic developments of /r/ in Celtic, Germanic and Romance languages

Regarding the Celtic branch, no important recent developments can be reported apart from the following detail. In Connemara Irish, the original nasal [n] can be realized as a rhotic with the nasalization of the following vowel, e.g. [kr̥uk] *cnoc* – ‘hill’ and [mr̥ã:] *mná* – ‘women’ (Bloch-Rozmej 1995: 170). In the light of the standard version of GP, this change might be viewed as the weakening resulting from a vulnerable position of C2 in consonant clusters.

In the Germanic subdivision of IE languages, the situation is much more interesting. In particular, the Modern German ‘rhotic’ /R/ or /ʀ/ can be vocalized before a consonant to a non-syllabic vowel, e.g. [ve:ɾ] *Wert* – ‘value’ or to a syllabic vowel word-finally, e.g. [ziçɾ] *sicher* ‘for sure’ (Wiese 1996: 253). These developments resemble the English vocalization/loss or even incorporation of the /r/ consonantal segment into a vowel before another consonant or its phonetic loss at the right edge of the word. In the former case, the C1 position of /r/ in a cluster seems to result in its damage, as the GP standard theory and its daughter frameworks predict, while in the latter the final context contributes to its phonetic silence.

In Dutch, as reported by Collins and Mees (2003: 201), the word-final rhotic sound /r/ may be also elided in regular speech. No great news, it seems. It is not specified if and/or what follows that sound in connected speech.

In some rhotic dialects of American English, /r/ is dropped in words which contain two identical rhotics, as described by Hall

(2007), via dissimilation, and the position of the liquid is not important, e.g. [ˈhæmbə(r)gər] *hamburger*, [ˈlæb(r)ədɔr] *Labrador*. From the viewpoint of the phonological theories outlined above, the withdrawal of the rhotic from the phonetic string may be accounted for in a few ways, but the insistence of the author of the aforementioned paper suggests that the dissimilation factor present in the mental grammars of the speakers is the most convincing.

On the subject of *r*-like sounds in the Romance branch of the IE languages, Paradis and LaCharité (2011: 1799-1800) claim that rhotics are prone to lenition cross-linguistically (and especially finally in Middle French, following Zinc 1986), and that their behaviour is sometimes difficult to comprehend. They also report the recent deletions of the final rhotic sounds in Quebec French, e.g. [bɔ̃ʒu(:)] *bonjour* – ‘good day’, as well as in Caribbean Spanish, e.g. [ma] *mar* – ‘sea’. Moreover, in European Portuguese the word final /r/ can be deleted in everyday speech before a consonant-initial word in a phrase, as reported by Veloso (2015: 334). This resembles the deletion of /r/ word-finally in non-rhotic varieties of English when a consonant follows it in a closely connected phrase. Also, in Brazilian Portuguese the final /r/ or its tapped equivalent is not pronounced in normal conversation, which is stated by Thomas (1974: 9). All these authors do not report any disappearance of the /r/ sound in a pre-consonantal position, though.<sup>6</sup>

Lastly and most interestingly and intriguingly, Wernicke-Heinrichs (1996: 26-36), following Pope (1934), Nyrop (1935), Wolff (1958) and a few other authors, claims that the /r/ inherited from Latin, be it vulgar or local, was lost in Old and Middle French, just like the other sonorants, in pre-consonantal position and word-finally in many polysyllabic words. Even more surprisingly, that /r/ is said to have been reinstated in the 16<sup>th</sup>-17<sup>th</sup> centuries, merely due to the pressure from prescriptive grammarians who argued that the silent /r/ was socially unacceptable, e.g. *Charles* > *Challes* > *Charles* – personal

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<sup>6</sup> Of course, if we treat a phrase of connected speech as a phonological context, the Portuguese example would be a case in point. In single words that does not happen.

name, *mercredi* > *mecredi* > *mercredi* – ‘Wednesday’, *arbre* > *abre* > *arbre* – ‘tree’, *finir* > *fini* > *finir* – ‘to end’.

The examples quoted above point to the phonological processes of assimilation (/r/ > /l/ in e.g. *Charles* > *Challes*) or dissimilation (too many *r*'s in a word)<sup>7</sup> understood as a loss (e.g. *mercredi* > *mecredi*), affecting individual words, perhaps due to their high frequency, which Wernicke-Heinrichs (1996) takes into consideration. Thus, in all likelihood these changes had little to do with a general or massive tendency of eliminating the rhotic from the language or a diachronic phonetically-based sound change. On the other hand, the loss of final /r/ in polysyllabic words and its artificial restoration was apparently a fact, although it did not occur in monosyllables and there were too many exceptions to consider the development as complete. It seems, therefore, that either the loss of Old/Middle French /r/ occurred in some social classes (i.e. the phonology of some speakers was different from that of the others) or it was a phenomenon confined to selected portions of the vocabulary, probably those which are very frequently used.<sup>8</sup> In the former case, those changes could be explained by the phonological theories presented above in terms of weak positions governed by strong segments or just being in a weak spot, while the latter case is an observation of assimilatory and dissimilarity processes which happen irrespective of the predictions made by these theories.

## 11. Conclusion

In this paper selected developments of the /r/ sound from prehistoric times until the present day were sketched and exemplified. As we could see, the diverse behaviour of the rhotic sounds in Germanic, Celtic and Romance languages occasionally escape generalizations from the viewpoint of a few phonological theories although some changes which these sounds have undergone are theoretically

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<sup>7</sup> This phenomenon of dissimilation may be treated as an effect of the so-called segmental similarity avoidance OCP constraint (e.g. Frisch 2004).

<sup>8</sup> I am grateful to Joaquim Brandão de Carvalho (personal communication) for confirming my doubts about these issues and clarifying most of them to me.

predictable, logical and explicable. Some of the other developments may be examples of lexical diffusion.

The PIE /r/ seems to be disappearing from weak word-positions in some Germanic, Celtic and Romance languages and appears to be ‘dying’ there although, compared to all the other sonorants, it is dying very hard. It goes without saying that further research is necessary before final conclusions can be made.

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