

## DOUBLE RHOTIC CONSONANTS IN WORD-INITIAL POSITION IN MEDIEVAL SONGS: HYPOSEGMENTATION CASES

Débora Aparecida dos Reis Justo BARRETO\*  
Ana Carolina CANGEMI\*\*

- **ABSTRACT:** This paper enquires into the hyposegmentation cases that involve double rhotic consonants in initial position of words and clitics in Old Portuguese (OP). The aim of the study is to map, in the troubadour era, the hyposegmentation cases of the rhotic consonant in word-initial position. The mapping indicates a slight variation in the spelling of words that begin with this consonant and the lack of spaces is found systematically in the context of the presence of clitic followed by the studied consonant.
- **KEYWORDS:** old Portuguese; medieval lyric; double rhotic consonants; hyposegmentation; prosodic phonology.

### Introduction

This study aims to examine double rhotic consonants (represented by the segments <r> and <rr>), especially the cases of hyposegmentation, in word-initial position in medieval songs written in Old Portuguese (OP). Based on the analysis of all words containing rhotic consonants in word-initial position in the first 100 *Cantigas de Santa Maria* and in 150 profane songs, we aim to reflect on hyposegmentation cases in the 13<sup>th</sup> century, troubadour era. We understand, as hyposegmentation, the absence of graphic borders between words, as in *denada* instead of *de nada*, ‘you’re welcome’, *comcerteza* instead of *com certeza*, ‘certainly’, for example.

Phonetically, rhotic consonants are liquid consonants, perceived as “R” sounds. Ladefoged and Maddieson (1996) explain, as rhotic, the sounds represented orthographically by “r”. These can be produced through different modes of articulation, namely: trills, taps, fricatives and approximants. In addition, they are articulated at various points in the speech apparatus, from the glottis to the tip of the tongue.

---

\* Universidade Estadual Paulista “Júlio de Mesquita Filho” (UNESP). Araraquara – SP - Brazil. Bolsista FAPESP (Processo: 2018/24793-3). lupitajbarreto@gmail.com. ORCID: 0000-0003-3788-7429.

\*\* Universidade Estadual Paulista “Júlio de Mesquita Filho” (UNESP). Araraquara – SP - Brasil. ana.cangemi@unesp.br. ORCID: 0000-0001-5395-9862.

Differently from the multiple characteristics of rhotics in phonetics, phonologically, Ladefoged and Maddieson (1996) observe that rhotics exhibit similar behaviours:

i) not uncommonly, they are the only consonants allowed as second members in clusters at the beginning of the syllable or as first members of clusters in coda position;

ii) they tend to occur close to the syllabic nucleus, they often share this privileged position with lateral and/or nasal approximants; and

iii) most importantly, as evidence that they belong to a single class, at least from a phonological point of view, the fact that rhotics of one kind often alternate with other rhotics.

From the analysis of all the words containing rhotic consonants in the initial position of the word in the first 100 *Cantigas de Santa Maria* and 150 profane cantigas, we seek, in the troubadour era, 13th century, to reflect on cases of hyposegmentation. We understand, as hyposegmentation, the absence of graphic boundaries between words, as in “denada” for “de nada”, “comcerteza” for “com certeza”, for example.

The corpus of the research is composed of a selection of medieval religious lyrics. The selected material was Mettmann’s edition (1986-1989) of the *Cantigas de Santa Maria*, a songbook in praise of the Virgin Mary elaborated in the second half of the 13<sup>th</sup> century, which was attributed to the king of Leão and Castela, Afonso X, the Wise (2003). In addition, there are 150 profane songs from Portugal and Galicia. Such works are unique because they encompass different times, regions, social categories and nationalities. In addition, they portray an artistic use of the population’s natural language.

They are, therefore, written records of poetic texts remaining from the troubadour era, in which there was an alphabet-based writing system, but no established spelling. Furthermore, the language’s prosody was not particularly marked. Because it contains a large number of relevant information regarding the segmental and suprasegmental elements of the language in which the texts were composed, poetic texts were chosen for the work in the light of non-linear phonological theories.

### **Corpus: Medieval songs<sup>1</sup>**

As fate would have it, three songbooks survived [...] and also the codices of the *Cantigas de Santa Maria*, which undoubtedly do not add up to all the troubadour poetic production, but constitute a concrete set on which the researcher with both literary interest and with intention of linguistic

---

<sup>1</sup> This work uses facsimile editions of the OP songs, as well as diplomatic editions in cases of decipherment doubt. The use of the primary source is fundamental for the study involving the syllable structure as, according to Massini-Cagliari (2015), a decisive mark of the original version may disappear from a diplomatic edition, after applying the new orthographic agreements. This paper, therefore, assumes that the use of the facsimile, which provides access to photographic reproduction of the materials, in real size, is the best choice for the study we now propose. We understand that the facsimile editing is sovereign, since its purpose is not to interpret the work, but to present it with integrity.

analysis can define as being representative of the medieval Portuguese poetic production.<sup>2</sup> (MATTOS E SILVA, 1989, p.17, our translation).

This study aims to analyse and map hyposegmentation cases in word-initial position in medieval Portuguese songs. Given the proposal, it is necessary to contextualise the corpus we use as source.

A research aimed at the analysis of rhotic consonants of the Old Portuguese period requires an investigation of the selected material's particularities. Therefore, discussing the nature of OP artistic production is extremely relevant for interpreting the occurrences that constitute the corpus. In this section, we demonstrate the main structural, authorial, linguistic and thematic features of medieval works. It should be noted that the choice for the lyric written in OP comes from the concern that the data may represent the singularities of the Portuguese language back then.

## Profane songs

Because they encompass different periods, locations, social classes and nationalities, profane songs have enormous representativeness. The profane songbook is located between the end of the 12<sup>th</sup> century and the beginning of the 14<sup>th</sup> century, with more than 1700 poetic works, the authorship of which is attributed to about 160 writers.

Massini-Cagliari (2007) observes that this type of composition encompasses three distinct genres: *songs of love, friend and mockery and cursing*. Very little of the production from that time has survived to the present day, leaving only three songbooks, in which general compilations are located, and five separate sheets containing one or more songs. The general songbook is organized into three sections, in which the genres are distributed in the order mentioned above and the poems are arranged from the oldest troubadour to the newest. It is relevant to say that none of the three songbooks categorically follows this ordering, as they are all copies (firsts or copies of copies).

Oliveira (1994) believes that, in addition to the tripartition of canonical genres and the chronological organization of the authors, a third intention guided the preparation of the songbooks. For the author, the compiler of the collection aimed to include only noble poets, from the aristocracy. An indication of this fact was found in the codices of the National Library of Lisbon and the Vatican, in which there are rubrics that not only introduce what will be the next genre portrayed, but also indicate the social status of the composers. The profane lyric comes from Portugal and Galicia and the adopted language is an artistic use of the people's native speech.

---

<sup>2</sup> Original: "*Quis o destino que sobrevivessem os três cancioneiros [...] e ainda os códices das Cantigas de Santa Maria, que, sem dívida, não somam toda a produção poética trovadoresca, mas constituem um conjunto concreto sobre o qual o pesquisador tanto com interesse literário como com intenção de análise linguística pode definir como sendo representativo da produção medieval poética portuguesa*" (MATTOS E SILVA, 1989, p.17).

Massini-Cagliari (2007) argues that, in love songs, the troubadour directly addresses the beloved lady, demonstrating an absolute and blind submission. These works are observed in the codices in three ways: in the first, they imitate the Provençal ones and are based on convention; in the second such imitation is less servile; in the third, the national and the popular stand out (NUNES, 1973). According to Bueno (1968), there is a predominance of a courteous social environment in this type of song, which was characterized by being more erudite/cultured and intended for the appreciation of the most enlightened of the time. Lanciani (1993) explains that the love song is not directed to a real woman, but is dedicated to an abstract figure. Mongelli (2009) claims that such songs are judged by critics to be inferior to that of a friend. The arguments found in the literature consider that the works of love are imprisoned in rigid formal and thematic recipes, are marked by a recurrence of the *coita* (suffering) and are very similar to the Provençal *cansó*, whose model they followed. Mongelli (2009) does not agree with these claims and emphasizes that love poems are quite different from the Provençal *cansó*, both in the look attributed to the lady and the posture assumed by the lover, as well as in the speech and setting. Furthermore, according to the author, Lapa (1933), in a dialogue with Michaëlis de Vasconcelos, points out that the insistence of the *coita*, seen by some as something reductive, expresses a psychological truth and a density interior. In this genre, the beloved lady figures as good and evil at the same time, which reflects two different and complementary directions of the medieval imagination: one that sees the maiden's love as capable of elevating the lover and making him a better person, to, so deserve it; and another who judges this love as having the ability to enslave him to carnal desires.

Friend songs, compared to love songs, are more national and popular, in addition to comprising the genre most committed to dance and music. Massini-Cagliari (2015) emphasizes that such texts have a greater variety of subjects and approaches and that parallelism is cultivated by the troubadour. Although they are made by men, the voice that emerges in the songs is female. In this way, the loving initiative comes from the woman, who ceases to be a passive object of male passion (as represented in love songs) and becomes an active subject of this affection (BUENO, 1968). Mongelli (2009) mentions that, due to their great formal and thematic flexibility, friend narratives enjoyed significant acceptance by critics and the public. According to the author, only a fragile border separates the two genres described so far, because, although the themes follow different paths, they always end up returning to the rhetoric of unhappy love.

The *mocking and cursing songs*, according to Massini-Cagliari (2007), encompass: moral, political and literary satires, personal slanders, tensions, tears, and parody. Both the *mocking* and the *cursing* narratives are designed for the purpose of speaking ill of someone, but in the *mocking* narratives this was done *covertly*, ambiguously, and in the *cursing* ones, *openly*, directly, without disguises. As a result of the use of *covered words*, this type of song, in terms of form, was not so popular and was closer to the more erudite genres. Mongelli (2009) determines that, as well as female voice singing, *mocking and cursing songs* enjoyed an immediate prestige, which was established over

time. For the author, this relevance derives, in the first place, from the fact that this genre, by referring to locations, characters and concrete situations, allows a panorama of historical events that took place between the 12th and 14th centuries to be built. Secondly, such compositions are constituted from nuances of the comic, making the work always dynamic and up-to-date. The reason of being of such texts is ambiguity and contrast, and although it is unanimous among critics that they aim more at entertaining the public than at denouncing society's ills, the comic always has a reforming purpose, since it focuses on what feels wrong.

In the satirical texts of the troubadours, there is a predominance of obscene terminology. Lapa (1998) comments that the use of euphemisms was rare, as the authors preferred to call things by their own names. At that time in history, it was good manners to avoid offenses, which made the act of covering up injury, in poetic productions, a social demand strongly rooted in the mentality of the medieval poet. Therefore, these attenuations ended up giving rise to the humor and sarcasm of *the mocking and cursing* poems, which hardly moved towards abstractions of a religious or moralizing character. Lanciani and Tavani (1998) emphasize that all texts that were not similar to those of love or friend, due to their theme and/or form, were considered satirical. Therefore, the genre in question is the least homogeneous of the three and the most difficult to define and identify, as it manifests a great diversity of themes, tonal modulations and configurations.

The remaining profane corpus is distributed in three extensive songbooks and five single sheets with one or more poems. The *Cancioneiro da Ajuda* (CA), dating from between the end of the 13<sup>th</sup> and the beginning of the 14<sup>th</sup> century, is considered the most contemporary codex with troubadours and the only one of Iberian origin. It is currently located in the Palácio da Ajuda Library, in Lisbon, and encompasses only love poetry. Massini-Cagliari (2007) argues that this manuscript is incomplete in several ways, because it preserves only 310 compositions, written by 38 writers, and does not contain any musical notation. The decoration, rubrics and miniatures have not been finalized and there are several gaps in the folios. Ramos (1993) reveals that this codex was transcribed in black, in Gothic miniscule of French origin, by several hands. It should be noted that the rules of Gothic writing were respected both in the choice of letters and in the use of abbreviations.

The *Cancioneiro da Biblioteca Nacional de Lisboa* (CBN), also known as *Colocci-Brancuti*, is the only record for about 250 profane songs. Considered the most complete of medieval songbooks, it has, on average, 1560 works, belonging to the three canonical genres, authored by 150 poets. The letter used manifests the format current in the 15th century and the codex was written by six hands (in addition to the constant presence of Colocci). Ferrari (1993a) mentions that, of the six copyists, five use Gothic-bastard varieties. The scribe seen as the principal adopts a chancellaresque italic script. The layout of the different hands is disorderly and doesn't seem to correspond to any logical organization. The songs were written in black ink and the initial letters of all texts bear rich ornaments.

The CBN, as well as the *Cancioneiro da Vaticana* (CV), corresponds to a copy made in Italy, in the first half of the 16<sup>th</sup> century. For Ferrari (1993b), the CV was orchestrated by a single copyist. Cintra (1973), in turn, postulates that the work was produced by two hands: the one that transcribed all the songs and the one that made the rubrics and annotations that accompany the poems. This songbook contains 1200 compositions and can be found in the Vatican Apostolic Library. At the beginning of the codex, there is a significant gap, which deprives it of 390 poems that are present in CBN. It was made in humanistic cursive script, with very corrosive sepia ink, a fact that makes reading it an extremely arduous task, since the ink led to the passage of writing from verse to straight and vice versa.

In addition to the three manuscripts mentioned above, two separate records are relevant to the studies proposed here: the *Pergaminho Vindel* and the *Pergaminho Sharrer*. For Massini-Cagliari (2007), the first is the only remaining document of scores of the friend poems, with their respective stories. It comprises seven compositions of the genre, by Martim Codax, followed by musical notation. There is only one song without music. It is believed to have been carried out in the late 13<sup>th</sup> century or early 20<sup>th</sup> century by three hands. It has a round gothic letter and its characteristics bring it closer to CA and CSM. The *Pergaminho Sharrer*, according to the author, is a well mutilated folio, dating from the same phase as the *Vindel*. It brings together seven love narratives, prepared by D. Dinis, also present on the CBN and on the CV, accompanied by the songs, and covers many calligraphic styles of Gothic writing. Mongelli (2009) explains that it is unanimous among researchers in the area that such testimonies are not even a third of what was actually produced by the troubadours of that period in Portuguese history.

### *Cantigas de Santa Maria*

The CSMs of King D. Afonso X<sup>3</sup> of Castela, the Wise, are a collection of 420 poems that recount the miracles of intercessions of the Virgin Mary, dating from the end of the 13<sup>th</sup> century. Often, the poems written in the medieval parlance - the language preferred by the lyric poets of that time (O'CALLAGHAN, 1998) - are illuminated in full-page miniatures (Figure 1). In other cases, there are decorated initial letters (Figure 2).

---

<sup>3</sup> According to Filgueira Valverde (1985, Afonso X was born on the 22<sup>nd</sup> of November, 1221 in Toledo. He was the firstborn son of Fernando and Beatriz Suabia and spent part of his childhood in Galicia. In 1246, he married Princess Yolanda and, some time later, in 1251, his reign began. Afonso X had “[...] a troubled government, full of internal and external conflicts, which culminated in the revolt of his son D. Sancho, who sought to seize the throne in 1282. Abandoned by everyone, including his grandson, D. Dinis, king of Portugal, he was eventually helped by the Moorish king of Morocco.” (VIEIRA, 1987, p. 141, our translation). The Wise king died in Seville on the 4<sup>th</sup> of April, 1284 at the age of 63, having been king until his death. Throughout this period, “his figure is at the centre of Iberian poetic activity in the 13<sup>th</sup> century” (BERTOLUCCI PIZZORUSSO, 1993b, p.37, our translation).

Figure 1 – CSM illumination.



Source: Opening miniature from the prologue *A Códice Escorial Rico* (T). Reproduced from the work of Leão (2007, p.15).

Figure 2 – CSM decorated letters.



Source: *Cantigas de Santa María*. Edición facsímile do Códice de Toledo (To). Biblioteca Nacional de Madrid (Ms. 10.069). Vigo: Consello da Cultura Galega, Galáxia, 2003. Folios 116r and 116v.

Regarding the illuminations, Leão (2007, p.27) says “[...] while the verbal narrative is expressed in a synthetic poem full of meanings, the visual narrative follows it through the sequence of the illuminations, sometimes being able to extrapolate it to fill any gaps in the poetic narrative.” In the decorated letters, the writing is divided into two columns with 27 lines each, and the initial letters of the songs are alternated in red (decorated in blue) and blue (decorated in red) (FERREIRA, 1994). According to Parkinson (2000a), the exchange of red and black colors helps to distinguish the two components of the index entries, the rubric (or epigraph) and the *incipit* (initial verse).

According to Parkinson (1998b), CSMs are a literary, musical and artistic monument of the highest importance. According to Bertolucci Pizzorusso (1993a), the CSMs are the largest medieval collection in praise of the Virgin. According to the author, there are two types of songs: *miragres* (‘miracles’) - which narrate miracles achieved by the Virgin, regarding help with illnesses, help with dangers, or also in helping decisions by King Afonso X, which add up to a total of 356; and *loores* (‘praise’) - which have a more lyrical character to praise Virgin Mary as a helper, mediator and intervener, these being the rest, with the exception of an introduction and two prologue songs.

Mettmann (1986) reveals that there is an extraordinary variety of metric forms: among the 420 songs, there are more than 280 different metric combinations, of which about 170 do not appear more than once in the entire songbook. The predominant strophic form is *virelai* (or *zejel*<sup>4</sup>), used in more than 380 compositions.

<sup>4</sup> *Zejel* (or *zējel*, *zēxel*, *zadjal*) corresponds to the Mozarabic terminology used in the French *virelai* (PARKINSON, 1998a, p.191).

Regarding the syllable counting of the verses in contemporary Portuguese language, two forms can be used: the first considers that the poetic syllables are counted until the last stressed syllable of the verse, disregarding the final unstressed ones, and, in the second, the counting always considers an unstressed syllable after the stressed syllable, even if it does not exist. The product of the first way of counting is the *verso agudo*, characteristic of Portuguese and French, and the product of the second way is the *verso grave*, characteristic of Italian and Spanish. During the CSM period, there were two ways of making lyric works. The first and oldest followed the law of Mussafia: all the verse syllables were counted.

While, in the set of profane songs, there is a preference for the strategy known as the law of Mussafia, that is, for the consideration of the unstressed syllables at the end of verse as participants in the poem's metric structure, in religious songs this strategy appears less than the other, in which the final unstressed syllables are disregarded when counting poetic syllables (MASSINI-CAGLIARI, 2005, p.174, our translation).<sup>5</sup>

The CSM came down to us through four old manuscripts named codices<sup>6</sup> (PARKINSON, 1998b):

- To: Toledo, Madrid, Biblioteca Nacional, MS 10.069 – the smallest and oldest of all, which also contains an index of a hundred songs;
- T: El Escorial, Real Monasterio de san Lorenzo, MS T.I.1 (*códice Rico*, ‘Rich codex’, or *códice das histórias*, ‘story codex’) – considered the richest in artistic (mainly iconographic) content;
- F: Firenze, Biblioteca Nazionale Centrale, Banco Rari, 20 (Firenze codex) – forms a set with the Escorial Rico codex, once the songs in it complete the T codex;
- E: El Escorial, Real Monasterio de san Lorenzo, MS B.I.2 (known as Escorial codex or *códice dos músicos*, ‘musician’s codex’) – the most complete of all.

It is worth mentioning that we undertake the mapping of double rhotic consonants in the word-initial position in the four codices. In addition, following the order of presentation of the CSMs in the codices, the first 100 CSMs were mapped and analysed.

---

<sup>5</sup> Original: “*Enquanto, no conjunto de cantigas profanas, há uma preferência pela estratégia conhecida como lei de Mussafia, isto é, pela consideração das átonas de final de verso como participantes da estrutura métrica do poema, nas cantigas religiosas essa estratégia aparece menos do que a outra, em que as átonas finais são desconsideradas na contagem das sílabas poéticas*” (MASSINI-CAGLIARI, 2005, p.174).

<sup>6</sup> The manuscripts’ quotas, as well as the acronyms conventionally used for referencing them, are those shown above, according to Parkinson (1998b, p. 86, note 3). The ET codices belong to the Biblioteca Del Monasterio de El Escorial in Spain. The To codex is preserved in the Biblioteca Nacional de Madrid and the F belongs to the Biblioteca Nazionale Centrale of Florence, Italy. Experts usually point to 1275 as the probable end date for To, while the making of T, F is located around 1280-1284, the final years of D. Afonso X’s reign (PARKINSON, 2000b).



## Theoretical approach

One of the realms of the Historical Linguistics specialist is the search, in the past, for evidence that can explain the present facts of the language. However, this is not an easy task, because, as Labov (1981, p. 20) ponders, this area consists of “the art of making the best use of bad data”.<sup>7</sup> The cases the linguist in the historical area tackles are never perfect because they are the result of writing, in a time when there was no technology to keep all the peculiarities of the spoken variety.

This difficulty aside, the search for methodologies that help the researcher to deal with imperfect data is of paramount importance. In terms of theory, we anchor our work to nonlinear phonologies, especially in the metric and prosodic models, which focus on matters of syllabic structuring (its internal constituents and its external relationship in the prosodic hierarchy) and rhythm, respectively - Nespor and Vogel (2007 [1986]) and Selkirk (1984).<sup>8</sup>

## Hyposegmentation

Hyposegmentation consists of the absence of a blank space in the places expected by the spelling (TENANI; PARANHOS, 2011). This lack of segmentation portrays strong clues as to how the writers project characteristics of orality in graphic utterances, since they tend to consider the phonic chain as being a single prosodic unit. In the most recurrent cases of the phenomenon, the clitic becomes a pretonic syllable of the following word:

(1)

Old Portuguese: [de] [rrige]<sub>ω</sub> → [[derrige]<sub>ω</sub>]<sub>C</sub> ‘strongly’

Brazilian Portuguese<sup>9</sup>: [por] [favor]<sub>ω</sub> → [[porfavor]<sub>ω</sub>]<sub>C</sub> ‘please’ (TENANI; PARANHOS, 2011, p.490)

The hyposegmentation phenomenon comprises linguistic marks through which heterogeneity can be seen. It is worth noting that the process of merging words is strictly restricted to writing, not reaching other levels of linguistic analysis.

---

<sup>7</sup> Original: “*arte de fazer o melhor uso de maus dados*”. (LABOV, 1981, p.20)

<sup>8</sup> The option of supporting phonological analyses in the light of non-linear theories, and not in the most recent theoretical model in Linguistics, namely the Optimality Theory (McCARTHY; PRINCE, 1995; PRINCE; SMOLENSKY, 1993; KAGER, 1999, among others) was due to the fact that the vast majority of works produced on OP use an approach based on non-linear theories.

<sup>9</sup> For Brazilian Portuguese (BP), Fiel and Tenani (2014) argue that the absence of segmentation between words is not necessarily a mistake resulting from supposed interferences of the spoken language in the written modality. According to Chacon (2004), there are no texts or speeches that are entirely oral or written, because they are all the result of a heterogeneous way of composing the language’s graphic representation.

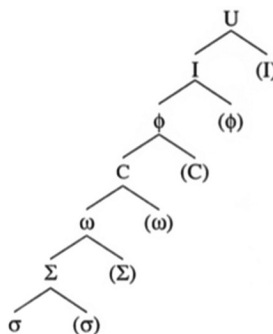
## Prosodic phonology

Phonology has been discussing, in the last decades, aspects that refer to the organisation of segments features, to the syllable representation and stress parameterisation. Autosegmental Phonology, Metric Phonology, Lexical Phonology and Prosodic Phonology, grouped under the label of nonlinear phonologies, derivational models, have been used with the aim of reaching generalisations, through principles that regulate the functioning of languages.

In regard to Prosodic Phonology, Selkirk's seminal work (1980) indicates what, later, is taken up by Nespors and Vogel (1982): the establishment of the hierarchical organisation of speech in prosodic constituents and its relationship with grammar. Then, in Selkirk (1984) and in Nespors and Vogel (2007 [1986]), models for the analysis of the relationship between phonology and other grammar modules are developed. Due to the fact that Prosodic Phonology (NESPORS; VOGEL, 2007 [1986]) does not include the syllable's internal structure, we turn to Metric Phonology (SELKIRK, 1984) as an aid, since it is necessary to verify whether syllabic moulds in OP are pertinent for the adherence (or not) of hyposegmentation.

To Nespors and Vogel (2007 [1986]), the prosodic structure is determined, partially, by syntax. Sometimes they do not match, sometimes they do. In other words, syntax does not always correspond to prosodic structure. In this perspective, prosodic constituents, placed hierarchically, are as follows (2):

(2)



Utterance - Intonational phrase - Phonological phrase - Clitic group - Phonological word - Foot - Syllable

Nespors and Vogel (2007 [1986]) establish seven units of the prosodic hierarchy in a growing scale of phonological domains, from the smallest to the largest constituent, which constitute the domains of application of phonological rules. The relationship between the syntactic structure and the prosodic structure is given by a syntactic-phonological mapping that provides a prosodic representation that, later on, belongs to one of the levels of the prosodic constituents' hierarchy.

As the purpose of this article is to reflect on cases of hyposegmentation in the word-initial position, the prosodic levels privileged are the phonological word ( $\omega$ ) and the clitic group (C).

### Methodological procedures

The methodology chosen is based on verifying whether spelling variation in the representation of these consonant segments is possible. When looking for the characteristics of the sounds of yore, we believe that the fact that there was not yet a standard spelling established by law at that time favoured the reproduction of specificities of oral language in written works. We believe, based on Massini-Cagliari (1998), that the perspective of troubadour spelling as mere phonetic transcription is naive. Mattos and Silva (2006) claims that the lack of grammatical control ended up resulting in recurring variations, which reflect some of the forms in use of that language. The act of examining the variation within the archaic songbooks therefore provides much evidence for some perception of the language that was spoken throughout the medieval stage of the Portuguese language.

At first, the songs were metrified, since, by delimiting the syllables, we can more safely investigate the prosodic structure, perceive the word concatenation within the verses and observe the solution given by the troubadour to the encounters of words, or clitics and words. The use of poetic texts is essential to obtain clues about the pronunciation of past periods, given that, by observing the way in which the poet counted the poetic syllables and placing the stress in the verses, one can ascertain the rhythmic and stress patterns of the language in which the songs were made.

Subsequently, we started to collect all the words spelt with <rr> in the corpus. We show, as an example, an excerpt taken from CSM 28, in which all the double rhotics were marked, in order to show how the <rr> grapheme was mapped:

(3)

[...]	
<i>Na/ ci/da/de,/ co/m' o'y,</i>	7b
<i>se/ Deus/ m' a/ju/d' e/ par/ca,</i>	6c
<i>San/ Ger/man/ den/tr' e/ra/ y,</i>	7b
<i>un/ san/to/ Pa/tri/ar/cha,</i>	6c
<i>que/ foi/ a/ Vir/gen/ ro/gar</i>	7d
<i>que/ de/la/ a/co/rru/do</i>	6A
<i>fo/ss' o/ po/blo/ sen/ tar/dar</i>	7d
<i>da/quel/ mou/r' a/tre/vu/do.</i>	6A
<i>Todo logar mui ben pode / seer defendudo...</i>	

*E/ as/ do/nas/ ar/ ro/gou* 7b  
*da/ mui/ no/bre/ ci/da/de* 6c  
*mui/ de/ rri/g' e/ con/sse/llou* 7b  
*que/ an/t' a/ ma/jes/ta/de* 6c  
*da/ Vir/gen/ fo/ssen/ quei/mar* 7d  
*can/de/as,/ que/ trau/do* 6A  
*o/ po/boo/ do/ lo/gar* 7d  
*non/ fo/sse,/ nen/ ren/du/do.* 6A

Todo logar mui ben pode / seer defendudo...

[...]

(CSM 28, METTMANN, 1986, p.129-130, emphasis added)

The words were grouped by song and by genre, and organised in classificatory charts, in which the occurrence of the rhotic segments was analysed according to their position in the syllable and in the word.

**Chart 1** – Example of the CSM 25 classificatory table.

**CSM 25 analysis**

Word	Verse	Page	Position in syllable	Position in word
pagar (‘to pay’)	3	117	end of the syllable	end of the word
dever (‘to own’)	3	117	end of the syllable	end of the word
Madre (‘Mother’)	4	117	middle of the syllable	middle of the word
querer (‘to want’)	5	117	start of the syllable	middle of the word
contar (‘to count’)	5	117	end of the syllable	end of the word
gran (‘great’)	6	117	middle of the syllable	middle of the word
miragre (‘miracle’)	6	117	start of the syllable	middle of the word
miragre (‘miracle’)	6	117	middle of the syllable	middle of the word
fremoso (‘handsome’)	6	117	middle of the syllable	middle of the word
Virgen (‘virgin’)	7	117	end of the syllable	middle of the word

## CSM 25 analysis

Word	Verse	Page	Position in syllable	Position in word
par (‘pair’)	7	117	end of the syllable	end of the word
Madre (‘Mother’)	8	117	middle of the syllable	middle of the word
gran (‘great’)	8	117	middle of the syllable	middle of the word
Rei (‘King’)	8	117	start of the syllable	start of the syllable
grorioso (‘glorious’)	8	117	middle of the syllable	middle of the word
grorioso (‘glorious’)	8	117	start of the syllable	middle of the word
por (‘to put’)	9	117	end of the syllable	end of the word
aver (‘to have’)	9	117	end of the syllable	end of the word

**Source:** Authors’ elaboration.

The use of poetic texts is essential to get clues about the pronunciation of past periods, given that, through the observation of the way the poet counted the poetic syllables and placed the accent on the verses, it is possible to refine the rhythmic and accentuation patterns of the language in which the chants were made.

After mapping the songs, all data was analysed qualitatively, based on the theoretical tools provided by the assumed models. Due to the impossibility of covering all poems, which comprise about two thousand works, we chose 250 poems, aiming to make our analysis viable from a practical point of view. This way, two branches of medieval lyric were considered, the religious one, formed by the first 100 CSM, and the profane one, composed by 50 compositions of each of the three genres. There were three criteria used to choose the profane set, based on the study by Massini-Cagliari (2015), which in turn adopted Oliveira’s material (1994) as an information source:

1. Representativeness, choosing authors from all periods;
2. Place, since Galician, Portuguese and Castilian poets lived together;
3. And social status, because there were troubadours from higher (kings, nobles and clerics) and lower classes (jesters).

## Results achieved

From the method assumed, all cases of hyposegmentation in the corpus were mapped. In this section, we bring the data obtained after mapping the first 100 CSM and 50 compositions of each of the three profane genres.

**Table 1** – Graphemes mapping regarding their position in the word.

Position in the word	R	RR	Subtotal
Start	860 (4.5%)	45 (0.2%)	<b>905</b>
Middle	11,321 (59.2%)	627 (3.3%)	<b>11,948</b>
End	6,282 (32.8%)	0	<b>6,282</b>
<b>Subtotal</b>	<b>18,463</b>	<b>672</b>	<b>19,135 (100%)</b>

Source: Authors' elaboration.

The mapping shown in Table 1 points to the fact that the double rhotic consonant is more often found in the middle of a word, that is, 3.3% of the mapped cases refer to this context and 0.2% of the cases correspond to a consonant at the beginning of a word. It is also possible to verify the difference in realization of <rr> compared to <r>. The latter is found more often than the former.

In Charts 2 and 3, we have all the words collected. In Chart 2, there is a list of words that, although are spelt with <r> in Mettmann's edition (1986), appear with a double rhotic in all or in some of the original codices. In the Chart 3, there is a sampling of terms with a single spelling, because both in Mettmann (1986) and in the source song(s), the data appears written with <rr>.

**Chart 2** – R-RR variation data.

Song	Word	Variation	Verse n°	Verse	With variation
CSM 65	Roma 'Rome'	rroma	46	e foi logo a <b>r</b> roma u o papa era	E
	rouco 'hoarse'	rrouco	177	que achou o preste que nõ era <b>r</b> rouco	E
CSM 77	rig 'strongly'	rrig	36	cada un nẽbro per si mui <b>derr</b> igestalava	T
	rijo 'strongly'	rrijo	41	veend aqueste oynde <b>derr</b> ijo chorando	
A 14	rem 'thing'	rrem	7	nen tem agora el en <b>r</b> rem	CBN/CV
	rem 'thing'	rrem	22	nom mousar nulha <b>r</b> rem dizer	
A 19	razom 'cause'	rrazom	10	de a sofrerdes faredes <b>r</b> razom	CBN/CV

Song	Word	Variation	Verse n°	Verse	With variation
A 50	ribas 'shores'	rribas	2	nas rribas do lago hu eu andar vy	CBN/CV
	ribas 'shores'	rribas	5	nas rribas do lago hu eu vi andar	
	ribas 'shores'	rribas	7	en nas rribas do lago hu eu andar vi	
	ribas 'shores'	rribas	10	en nas rribas do lago hu eu vi andar	
EM 2	remete 'sends'	rremete	2	poys rremete	CBN/CV
	rapazes 'lads'	rrapazes	21	mui peores ca rrapazes	
	rapazes 'lads'	rrapazes	27	e rrapazes dos martinhos	
EM 6	romeus 'pilgrims'	rromeus 'pilgrims'	23	en mha pousada chegaram rromeus	CBN/CV
EM 10	raiz 'firm'	rreiz	36	quantey na terra movil rreiz	CBN/CV
EM 19	Rem 'thing'	rren	1	Pedramigo quer ora hua rren	CBN/CV
	rafeç 'easy thing'	rrafec	3	do rrafec ome que vay bem querer	CBN/CV
	rafece 'easy thing'	rrafece	6	outrossy bem muy rrafece molher	CBN*
	rafec 'easy thing'	rrafec	23	e quem molher rrafec agram ssazom	CBN/CV
	razom 'cause'	rrazon	25	Joam Baveca ffora darrazon	CBN
				Joam Baveca fforada rrazon	CV
	rafeç 'easy thing'	rrafec	29	eorrrafeçome que vay seu amor	CBN/CV
	rafeç 'easy thing'	rrafec	33	Pedramigo rrafeçome non vy	CBN/CV
	rafeç 'easy thing'	rrafec	37	molher rrafece sse nom paga dal	CBN/CV
rafeç 'easy thing'	rrafec	45	do rrafeçome que ssa comunal	CBN/CV	

Song	Word	Variation	Verse n°	Verse	With variation
EM 28	rem 'thing'	rrẽ	23	do capelã nẽ perca rrẽ per mẽgua	CBN/CV
EM 31	razom 'cause'	rrazõ	14	caten comigue toda rrazõ	CV
EM 35	rapaz 'lad'	rrapaz	5	eno rostre chamarte rrapaz	CBN/CV
	Rodriguiz 'name'	rroiz	8	meen rroiz muy sen meu praz	CBN*
	Rodriguiz 'name'	rroiz	22	meen rroiz qreym enparar	CBN*
	Rodriguiz 'name'	rroiz	32	meã rroiz semen trosquiar	CBN*
EM 40	retalho 'bargain'	rretalho	16	toda rretalho por q ssaberã	CBN
	retalhades 'to bargain'	rretalhades	17	q rretalhades e cõprar vos am	
	rabo 'tail'	rrabo	21	cõtra orrabo volo ffilharey	
EM 45	ren 'thing'	rren	14	e dua rren sseede sabedor	CBN/CV
	rogo 'plea'	rrogo	19	por deus vos rrogo que esto nom seja	
	razon 'cause'	rrazõ	20	nẽ ffaçades coussa tan sen rrazõ	

\* No variation in the CV.

Source: Authors' elaboration.

Chart 3 – Data with a single spelling.

Song	Word	Verse n°	Updated verse (Mettmann, 1986)	Original verses
CSM 8	rrig' 'strongly'	34	u x' ant' estav', e atou-a   mui de rrig' e diss' assi:	mui de rrrig é diss assi (To)
				mui de rrrige diss assi (E)
				mui de rrrige dissassi (T)
CSM 25	rrijo 'strongly'	134	mui de rrijo lle demandava	mui de rrijo lle demãdava (To)
				mui de rrrijo lle demãdav (E)
				mui de rrijo lle demandav (T)
CSM 28	rrig' 'strongly'	43	mui de rrig' e conssellou	mui de rrrig é cõsellou (To)
				mui de rrrige ossellou (E)
				mui de rrrige conssellou (T)
CSM 47	rrijo 'strongly'	28	e a Santa Maria   mui de rrijo chamou,	mui de rrrijo chamou (To)
				mui de rrijo chamou (E)
				mui de rrrijo chamou (T)

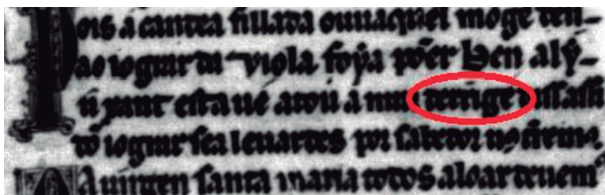


Song	Word	Verse n°	Updated verse (Mettmann, 1986)	Original verses
CSM 53	rrijo 'strongly'	18	e chorando mui de rrijo,   o pos ben ant' o altar.	e chorãdo mui derrijo (To)
				e chorãdo mui de rrijo (E)
				e chorando mui derrijo (T)
CSM 59	rrijo 'strongly'	73	de rrijo a foi ferir.	derrijo á foi firir (To)
				de rrijo a foi ferir (E)
				derrijo a foi ferir (T)
CSM 63	rrijo 'strongly'	34	mais ya-os mui de rrijo cometer.	mas yaos mui derrijo cometer (To)
				mais ya os mui derrijo comet (E)
				mas yaos mui derrijo cometer (T)
CSM 95	rrijo 'strongly'	48	con que movian de rrijo aos treus alçados;	con que moviã derrijo aos treus alçados (E)

Source: authors' elaboration.

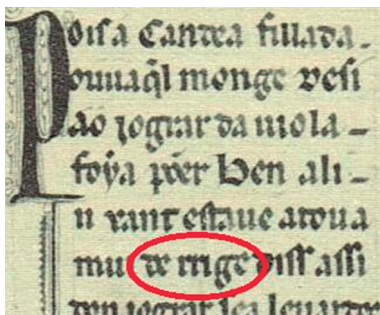
The Charts 2 and 3 indicate an important observation regarding the medieval period. As there was a lot of variation in medieval collections, it becomes difficult to specify a pattern, but the investigation of the cases allows us to infer that hyposegmentation tends to occur when the double rhotic is preceded by definite articles and prepositions. After adverbs, verbs and pronouns, the graphic boundary between words is usually preserved, that is, <rr> appears, in fact, at the onset of the first syllable. As mentioned, the spelling of the terms varies widely from one songbook to another, which shows that the hyposegmentation phenomenon was not something categorical in the language of the Middle Ages. The same word, preceded by the same clitic, may or may not be next to a space. In figures 3, 4 and 5, as an example, we highlight an occurrence in which the segmentation of terms varies according to the songbook. All images refer to verse 34 of CSM 8.

Figure 3 – Graphical merging of “derrige” – Excerpt from CSM 8 (T).



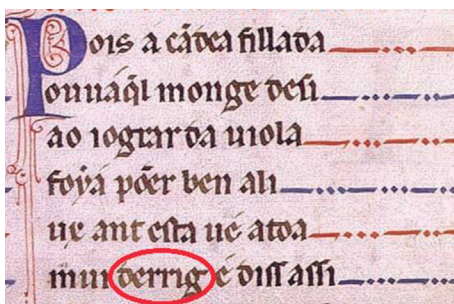
Source: Microfilm from the Escorial Rico codex, provided by the El Escorial Monastery Library.

Figure 4 – Graphical segmentation of “de rrige” – Excerpt from CSM 8 (E).



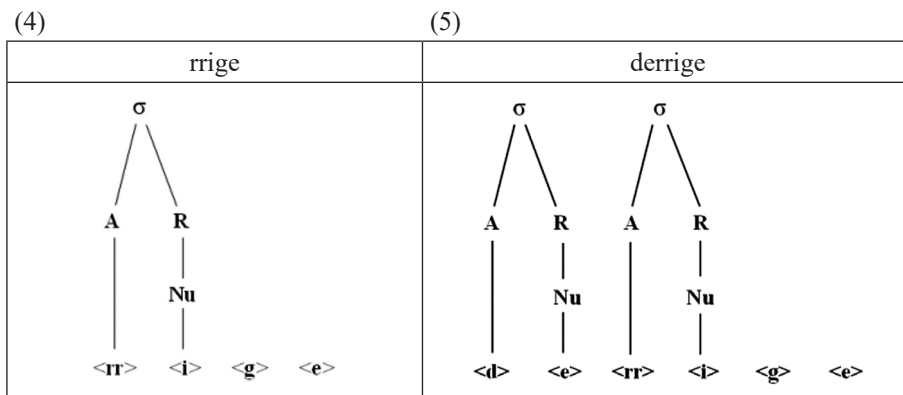
Source: Facsimile edition of the Escorial Músicos codex, edited by Anglés (1964, p. 38r).

Figure 5 – Graphical merging of “derrige” – Excerpt from CSM 8 (To).



Source: Facsimile edition of the Toledo codex (2003, p. 17v).

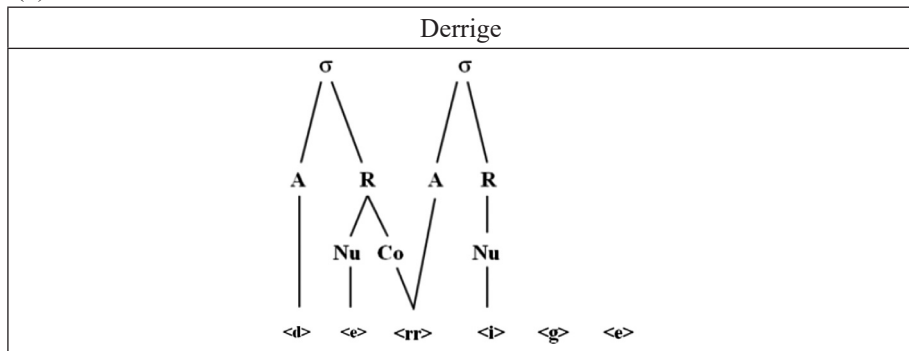
In light of the Metric Theory, we would have the following representations - (4) e (5):



Thus, it should be noted that the written representation of the terms usually varies from one songbook to another, showing that the cases of hyposegmentation in Old Portuguese were not categorical.

The obtained results reveal that, in the first phase of the Portuguese language history, the vast majority of words spelt with <rr> appear in an intervocalic environment, a position considered ideal for a geminate consonant to occur, at the phonological level, because such consonants close the preceding syllable while filling in the onset of the subsequent syllable. A possible representation for the syllabic closing follows in example (6):

(6)



However, the reorganisation of the syllable present in (6) is troublesome, since the initial rhotic is not considered a double consonant at the phonological level. Therefore, we believe that the phenomenon of merging words is therefore strictly limited to writing. Thus, the syllable does not undergo reorganisation and remains part of the onset of the second syllable, as represented in (5).

By graphically expressing the clitic as a pretonic syllable of the subsequent term, we believe that the scribe who was responsible for copying the work left strong traces of the speech singularities of that time, projecting them into the written works. The analysed data determine that, at the moment of writing the document, the phonic chain was interpreted by the copyist as a single prosodic unit.

It should be noted that we have not eliminated the possibility that the R-RR variation represents the presence of at least one variation at the beginning of the word. Nowadays, only strong-R takes place at the beginning of a word; at that time, it is possible to consider that weak-R appeared primarily in this context, alternating with strong-R.<sup>10</sup>

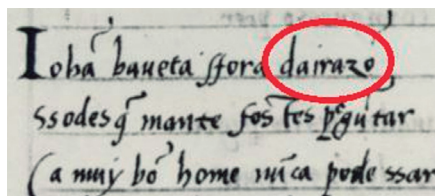
As for <rr> at the beginning of the word, we maintain the impossibility of considering gemination, since there is no opposition between the simple and double

<sup>10</sup> The evidence indicates that the phonetic production of OP was of taps and of trills, considering what is currently found in European Portuguese (EP). The existence of this type of change in the onset environment of The word's first syllable allows us to consider, at least, that these data may portray an embryo of the neutralisation found in the Portuguese language used today in Brazilian territory.

rhotics in this environment, since they also allude to the same word. We found that the double consonant represents a graphic variant of the initial <r>.

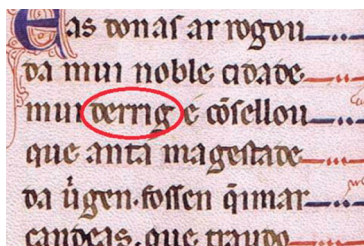
The *de* particle was the one with the most hyposegmentation occurrences. In the verses presented in figures 6 and 7, according to the Prosodic Theory, we would have as notation: [darrazon]<sub>C</sub> and [derrige]<sub>C</sub>, respectively.

**Figure 6** – Graphic merging between clitic and host in “darrazon” – Excerpt from the song *Pedr’Amigo, quer’ora ùa rem* (CBN 1.221) – Biblioteca Nacional de Lisboa Songbook.



Source: Facsimile edition of the Biblioteca Nacional de Lisboa codex – Colocci-Brancuti (1982, p. 554).

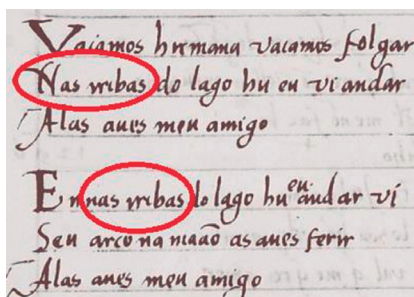
**Figure 7** – Graphic merging between clitic and host in “derrig” – Excerpt from CSM 28 (To).



Source: Facsimile edition of the Toledo codex (2003, p. 36v).

After adverbs and pronouns, the graphic boundary between the terms usually remains, as shown in figure 8, taken from the CBN folios. In the verses presented, according to the Prosodic Theory, we would have as prosodic notation: [[nasrribas]<sub>ω</sub>]<sub>C</sub>.

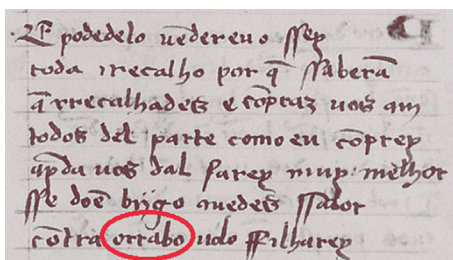
**Figure 8** – Graphic segmentation of “nas rribas” – Excerpt from the song *Vaiamos, irmana, vaiamos dormir* (CBN 1.298) – Biblioteca Nacional de Lisboa Songbook.



**Source:** Facsimile edition of the Biblioteca Nacional de Lisboa codex – Colocci-Brancuti (1982, p. 580).

Hyposegmentation tends to happen when there are definite articles and prepositions before the word. Right after adverbs and pronouns, the blank space provided by the spelling of the language usually remains. The same applies to verbs.

**Figure 9** – Example of hyposegmentation occurrence in non-verb.



**Source:** Facsimile edition of the Biblioteca Nacional de Lisboa codex – Colocci-Brancuti (1982, p. 1576).

The way the words are arranged inside the troubadour codices provides clues as to the possibilities of arranging these sequences of utterances. The set of data analysed indicates that aspects of orality can be found in the absence of word segmentation, since this graphic information is related, simultaneously, to the delimitation of word boundaries and to the syntagmatic organisation of words in the text.

## Conclusion

From the data collected in religious and profane songs, it is possible to verify evidence of hyposegmentation in Old Portuguese. The methodology adopted allowed it

to go beyond the data recorded in the writing, allowing conclusions about OP phonology, since, through the mapping of the possibilities of sounds represented orthographically by “r”, it was possible to verify the contexts of their realisations. Therefore, this type of work represents a very significant advance in relation to the historical studies developed in the 19<sup>th</sup> century and in the beginning of the 20<sup>th</sup> century, too tied to the sounds’ graphic manifestations of that time. Furthermore, it is possible to postulate two conclusions:

1<sup>st</sup> defined articles and prepositions, in relation to prosody, behave differently from adverbs and pronouns;

2<sup>nd</sup> hypossegmentation cases were not shown to trigger syllabic reorganization.

Finally, it is difficult to specify a pattern because there are variations in the songbooks, but we believe that the consonant <rr> tends to fill the interior of the clitic group when preceded by defined articles and prepositions.

BARRETO, D.; CANGEMI, A. Consoantes róticas duplas em contexto inicial de palavra nas cantigas medievais: casos de hipossegmentação. *Alfa*, São Paulo, v.65, 2021.

- *RESUMO: Este artigo traz uma reflexão sobre os casos de hipossegmentação que envolvem consoantes róticas duplas em contexto inicial de palavras e clíticos no português arcaico (PA). O objetivo do estudo consiste em mapear, na época trovadoresca, os casos de hipossegmentação da consoante rótica em posição inicial de palavra. O mapeamento indica leve variação na grafia das palavras que se iniciam com essa consoante e a falta de espaço em branco é sistematicamente encontrada no contexto de presença de clíticos seguidos da consoante estudada.*
- *PALAVRAS-CHAVE: Português arcaico; lírica medieval; consoantes róticas duplas; hipossegmentação; fonologia prosódica.*

## REFERENCES

AFONSO X, O SÁBIO. **Cantigas de Santa María**: edición fac simile do Códice de Toledo (To). Vigo: Consello da Cultura Galega: Galáxia, 2003. Biblioteca Nacional de Madrid (Ms. 10.069).

BERTOLUCCI PIZZORUSSO, V. Alfonso X. In: LANCIANI, G.; TAVANI, G. (org.). **Dicionário da literatura medieval galega e portuguesa**. Lisboa: Caminho, 1993a. p.36-41.

BERTOLUCCI PIZZORUSSO, V. Cantigas de Santa Maria. In: LANCIANI, G.; TAVANI, G. (org.). **Dicionário da literatura medieval galega e portuguesa**. Lisboa: Caminho, 1993b. p.142-146.

- BUENO, F. da S. **Antologia arcaica**: trechos, em prosa e verso, coligidos em obras do século VIII ao século XVI. São Paulo: Indústria Gráfica Saraiva, 1968.
- CINTRA, L. F. Introdução. *In*: **Cancioneiro Português da Biblioteca Vaticana (Cód. 4803)**: reprodução fac-similada com introdução de L. F. Lindley Cintra. Lisboa: Centro de Estudos Filológicos/Instituto de Alta Cultura, 1973. p.VII-XVIII.
- CHACON, L. Constituintes prosódicos e letramento em segmentações não-convencionais. **Letras de hoje**, Porto Alegre, v.39, n.3, 2004, p.223-232.
- FERRARI, A. Cancioneiro da Biblioteca Nacional (Colocci-Brancuti). *In*: LANCIANI, G.; TAVANI, G. (org.). **Dicionário da literatura medieval galego e portuguesa**. Lisboa: Caminho, 1993a. p.119-123.
- FERRARI, A. Cancioneiro da Biblioteca Vaticana. *In*: LANCIANI, G.; TAVANI, G. (org.). **Dicionário da literatura medieval galego e portuguesa**. Lisboa: Caminho, 1993b. p.123-126.
- FERREIRA, M. The stemma of the marian cantigas: philological and musical evidence. **Bulletin of the cantigueiros de Santa Maria**, Cincinnati, n.6, p.58-98, 1994.
- FIEL, R. P.; TENANI, L. Hipossegmentação de palavras escritas no Ensino Fundamental: tendências gerais. **Mosaico**, São José do Rio Preto, v.13, n.1, 2014, p.219-234.
- FILGUEIRA VALVERDE, J. Introducción. *In*: ALFONSO X, EL SABIO. **Cantigas de Santa María**: Códice Rico de El Escorial. Madri: Castalia, 1985. p.XI-LXIII.
- KAGER, R. **Optimality theory**. Cambridge: Cambridge University Press, 1999.
- LABOV, W. Resolving the neogrammarian controversy. **Language**, Washington, v.57, n.2, p.267-308, 1981.
- LADEFOGED, P.; MADDIESON, I. **Sounds of the world's languages**. Oxford: Blackwells, 1996.
- LANCIANI, G. Cantiga de amor. *In*: LANCIANI, G.; TAVANI, G. (org.). **Dicionário da literatura medieval galego e portuguesa**. Lisboa: Caminho, 1993. p.136-138.
- LANCIANI, G.; TAVANI, G. **A cantiga de escarnho e maldizer**. Lisboa: Edições Colibri, 1998.
- LAPA, M. R. **Cantigas d'escarnho e de mal dizer dos cancioneiros medievais portugueses**. 4.ed.il. Lisboa: João Sá da Costa, 1998.
- LAPA, M. R. Introdução. *In*: AFONSO X, O SÁBIO. **Cantigas de Santa Maria editadas por Rodrigues Lapa**. Lisboa: Imprensa Nacional, 1933. p.III-VIII.
- LEÃO, Â. V. **Cantigas de Santa Maria de Afonso X, o sábio**: aspectos culturais literários. São Paulo: Linear B; Belo Horizonte: Veredas & Cenários, 2007.

- MASSINI-CAGLIARI, G. **A música da fala dos trovadores**: desvendando a prosódia medieval. São Paulo: Ed. da UNESP Digital, 2015.
- MASSINI-CAGLIARI, G. **Cancioneiros Medievais Galego-Portugueses**: fontes, edições e estrutura. São Paulo: WMF Martins Fontes, 2007.
- MASSINI-CAGLIARI, G. **A música da fala dos trovadores**: estudos de prosódia do Português Arcaico, a partir das cantigas profanas e religiosas. Tese (Livre-Docência) - Faculdade de Ciências e Letras, Universidade Estadual Paulista, Araraquara, 2005.
- MASSINI-CAGLIARI, G. Escrita do Cancioneiro da Biblioteca Nacional de Lisboa: fonética ou ortográfica? **Filologia e Linguística Portuguesa**, São Paulo, n.2, p.159-178, 1998.
- MATTOS E SILVA, R. V. **O português arcaico**: fonologia, morfologia e sintaxe. São Paulo: Contexto, 2006.
- MATTOS E SILVA, R. V. **Estruturas trecentistas**: elementos para uma gramática do Português Arcaico. Lisboa: Imprensa Nacional – Casa da Moeda, 1989.
- McCARTHY, J.; PRINCE, A. Faithfulness and reduplicative identity. In: BECKMAN, J.; DICKEY, L.; URBANCZYK, S. (ed.). **Papers in optimality theory**. Amherst, Mass.: Graduate Linguistic Student Association, 1995. p.249-384. (University of Massachusetts Occasional Papers, 18).
- METTMANN, W. (org.). **Cantigas de Santa María (cantigas de 1 a 100)**: Alfonso X, el Sabio. Madrid: Castalia, 1986.
- MONGELLI, L. M. **Fremosos cantares**: antologia da lírica medieval galego-portuguesa. São Paulo: WMF Martins Fontes, 2009.
- NESPOR, M.; VOGEL, I. **Prosodic Phonology**. Dordrecht: Foris Publications, 2007 [1986].
- NESPOR, M.; VOGEL, I. Prosodic domains of external sandhi rules. In: HULST, H.; SMITH, N. (ed.). **The structure of phonological representations**. Dordrecht: Foris Publications, 1982. p.225-255.
- NUNES, J. J. **Cantigas d'amigo dos trovadores galego-portugueses**. Lisboa: Centro do Livro Brasileiro, 1973.
- O'CALLAGHAN, J. **Alfonso X and the Cantigas de Santa Maria**: a poetic biography. Leiden; Boston; Köln: Brill, 1998.
- OLIVEIRA, A. R. **Depois do espectáculo trovadoresco**: a estrutura dos cancioneiros peninsulares e as recolhas dos séculos XIII e XIV. Lisboa: Colibri, 1994.
- PARKINSON, S. Layout and structure of the Toledo Manuscript of the Cantigas de Santa Maria. In: PARKINSON, S. (org.). **Cobras e son**: papers on the Text Music and



Manuscripts of the 'Cantigas de Santa Maria'. Oxford: Legenda, University of Oxford, 2000a. p.133-153.

PARKINSON, S. Layout in the *Códices ricos* of the Cantigas de Santa Maria. **Hispanic Research Journal**, Leeds, v.1, n.3, p.243-274, 2000b.

PARKINSON, S. The first reorganization of the CSM. **Bulletin of the Cantigueiros de Santa Maria**, Cincinnati, v.1, n.2, p.91-97, 1998a.

PARKINSON, S. As Cantigas de Santa Maria: estado das cuestións textuais. **Anuario de estudos literarios galegos**, Vigo, p.179-205, 1998b.

PRINCE, A. S.; SMOLENSKY, P. **Optimality theory: constraint interaction in generative grammar**. Rutgers, Newark, NJ: Rutgers University, 1993. (Technical Report #2 of the Rutgers Center of Cognitive Science).

RAMOS, M. A. Cancioneiro da Ajuda. *In*: LANCIANI, G.; TAVANI, G. (org.). **Dicionário da literatura medieval galego e portuguesa**. Lisboa: Caminho, 1993. p.115-117.

SELKIRK, E. On the major class features and syllable theory. *In*: ARONOFF, M.; OEHRLE, R. (org). **Language Sound Structurn** Cambridge: MIT Press, 1984. p.107-136.

SELKIRK, E. **On prosodic structure and its relation to syntactic structure**. Indiana: IULC, 1980.

TENANI, L.; PARANHOS, F. C. Análise prosódica de segmentações não-convencionais de palavras em textos do sexto ano do Ensino Fundamental. **Filologia e Linguística Portuguesa**, São Paulo, v.13, p.477-504, 2011.

VIEIRA, Y. F. **Poesia medieval**. São Paulo: Global: 1987.

Received on January 11, 2020

Approved on July 12, 2020