On Galician definite article allomorphy

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Goals of this paper:
- To provide an OT account for the Galician definite article allomorphy.
- To show that the occurrence of the 2nd forms of the definite article is attributed to two kinds of morphosyntax-prosody alignments.

1 Galician definite article allomorphy

- The Galician definite articles have two allomorphs whose distribution is phonologically determined (Álvarez Blanco 1983, Dubert 2001):

1. The 1st forms
- in phrase-initial position: 
  - o gato cósmico /o gato cósmico/ 
  - a lingua galega /a lingua galega/ 
  - os falantes /os falantes/ 
  - as nenas /as nenas/ 
- after V-ending words: 
  - para o campo /para o campo/ 
  - sobre a lingua /sobre a lingua/ 
  - descrevo os problemas /descrevo os problemas/ 
  - entre as variantes /entre as variantes/

2. The 2nd forms
- after r-ending words:
  - polo mar /polo mar/ 
  - vi-la xente /vi-la xente/ 
  - limpia-los cinceiros /limpia-los cinceiros/ 
  - garda-las culleres /garda-las culleres/
- after s-ending words:
  - atopámo-lo libro /atopamos o libro/ 
  - rompiche-la saia /rompiches a saia/ 
  - cantámo-los números /cantamos os números/ 
  - tódalas mulleres /todas as mulleres/

- The triggers of the allomorphy, the preceding word-final r and s, are deleted. So, the occurrence of the 2nd forms is opaque on the surface.
2 Issues

Bracketing paradox

• Why is the allomorphic alternation conditioned by the preceding word, which is not the member of the same syntactic phrase?

Allomorphic alternations

• Why do the 2nd forms occur after /s/-ending words?
• Why is the form with marked syllable structure (onsetless syllable) realised as default?

Deletion of /r/ and /s/

• Why are the preceding word-final /r/ and /s/ deleted?

3 Analysis

3.1 Bracketing paradox: prosodification of the definite articles

On prosodification of articles

The articles in Galician are prosodically cliticised to the preceding word if it is available. Otherwise, they are cliticised to the following noun:

(8) Realisation of /n/ and the prosodification of the articles

b. un dente [un'dente] 'a tooth'

The left boundary of the lexical category must coincide with that of a prosodic word, while the left boundary of the functional category need not be projected to the prosodic structures.

PrWd structures do not correspond with the syntactic phrase structures.

PrWd: A functional word does not correspond to a PrWd.

Functional word cannot form a prosodic word independently, because it is not stressable.
(13) \( \text{FNC}{#PrWD} >> \text{WdCONL} >> \text{ALIGNXP-L} \)

(14) **Cliticisation to the preceding word if it is available:**

<table>
<thead>
<tr>
<th>/[VP vi [DP a [NP xente/</th>
<th>FNC{#PrWD}</th>
<th>WdCONL</th>
<th>ALIGNXP-L</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. [VP vi [DP a [NP xente (\text{PrWd}) (\text{PrWd})</td>
<td></td>
<td>!</td>
<td></td>
</tr>
<tr>
<td>b. [VP vi [DP a [NP xente (\text{PrWd})</td>
<td></td>
<td>!</td>
<td>*</td>
</tr>
<tr>
<td>c. [VP vi [DP a [NP xente (\text{PrWd})</td>
<td></td>
<td></td>
<td>*</td>
</tr>
</tbody>
</table>

(15) **Cliticisation to the following noun in phrase-initial position:**

<table>
<thead>
<tr>
<th>/[DP as [NP nenas/</th>
<th>FNC{#PrWD}</th>
<th>WdCONL</th>
<th>ALIGNXP-L</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. /[DP as [NP nenas (\text{PrWd})</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. /[DP as [NP nenas (\text{PrWd})</td>
<td></td>
<td>*</td>
<td>*</td>
</tr>
</tbody>
</table>

3.2 The allomorphic alternations

> / is an underlying segment:

- **Historical development of the 1st forms (ILG/RAG 1982):**
  - The original Galician definite articles lo, la, los, las have been changed to o, a, os, as in intervocalic position by /-deletion: para lo campo > para o campo. Then, the forms without / are extended to other contexts by analogy.

- **The definite articles in Asturian Galician:**

<table>
<thead>
<tr>
<th></th>
<th>MASC.</th>
<th>FEM.</th>
<th>NEUTER</th>
</tr>
</thead>
<tbody>
<tr>
<td>SG.</td>
<td>o/</td>
<td>a/el</td>
<td>lo ~ lu</td>
</tr>
<tr>
<td>PL.</td>
<td>os</td>
<td>as</td>
<td></td>
</tr>
</tbody>
</table>

- **The default 1st forms:**
  - The occurrence of the 1st forms (forms without onset) as the default allomorphs is purely lexical, because the preference for the onsetless forms cannot be attributed to phonological conditions.

**PROPOSAL:** The Galician definite articles have two underlying representations with a lexical precedence relation.

- **Multiple UR approach to lexical allomorphy (Kager 1996, to appear; Mascaró 1996):**
  - Lexical items that show allomorphic alternations contain more than one underlying representation, each of which is available as an input to grammatical mapping. The allomorphic choice is determined by constraint evaluations.

  - **The lexical priority ordering of listed allomorphs (Bonet, Lloret and Mascaró 2005):**
    - The set of allomorphs are defined as a (partially) ordered set: if \( \{A > B\} \), A lexically precedes to B. The constraint **PRIORITY** demands faithfulness to this lexical ordering.

  > (17) **PRIORITY** (Bonet, Lloret and Mascaró 2005)
  - Given an input containing allomorphs \( m_1, m_2, ..., m_n \) and a candidate containing \( m'_i \) in correspondence with \( m_i \), **PRIORITY** assigns as many violation marks as the depth of ordering between \( m_i \) and the highest dominating morph(s).

<table>
<thead>
<tr>
<th>(18) Underlying representations of the Galician definite articles</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEF. MASC. SG. = /o &gt; lo/</td>
</tr>
<tr>
<td>DEF. FEM. SG. = /a &gt; la/</td>
</tr>
<tr>
<td>DEF. MASC. PL. = /os &gt; los/</td>
</tr>
<tr>
<td>DEF. FEM. PL. = /as &gt; las/</td>
</tr>
</tbody>
</table>

- **Why do the 2nd forms occur after /-ending words?**

**PROPOSAL:** The 2nd forms is selected in order to avoid the misalignment between word boundary and syllable boundary.

> Relevant constraints

a. *C.V (= ONSET&NOCODA): CV sequence must not be parsed heterosyllabically.

b. **ONSET:** Syllables must have an onset.

c. **ALIGN-L(MWd, \( \sigma \)) (=ALIGNMWd-L):**

  - The left edge of a morphological word must be coincide with the left edge of a syllable.

(19) **Relevant constraints**

| a. *C.V (= ONSET&NOCODA): CV sequence must not be parsed heterosyllabically. |
| b. **ONSET:** Syllables must have an onset. |
| c. **ALIGN-L(MWd, \( \sigma \)) (=ALIGNMWd-L):** The left edge of a morphological word must be coincide with the left edge of a syllable. |

(20) **C.V, ALIGNMWd-L >> PRIORITY >> ONSET**
(21) Occurrence of the 2nd forms after words ending in r/s:

<table>
<thead>
<tr>
<th></th>
<th>/vir#{a₁ &gt; la₂}#/.../</th>
<th>*C.V</th>
<th>ALIGNMWD-L</th>
<th>PRIORITY</th>
<th>ONSET</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>vir.#a₁,...</td>
<td>*!</td>
<td></td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>b.</td>
<td>vi.r#a₁,...</td>
<td>*!</td>
<td></td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>c.</td>
<td>vi.#la₂,...</td>
<td></td>
<td></td>
<td></td>
<td>*</td>
</tr>
</tbody>
</table>

(The subscript numbers indicate the relation between the lexical allomorph and the output candidate. "#" denotes the MWd boundary.)

(22) Occurrence of the 1st forms in phrase-initial position:

<table>
<thead>
<tr>
<th></th>
<th>/{as₁ &gt; las₁}#nenas/</th>
<th>*C.V</th>
<th>ALIGNMWD-L</th>
<th>PRIORITY</th>
<th>ONSET</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>as₁.#ne.nas</td>
<td></td>
<td></td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>b.</td>
<td>las₁.#ne.nas</td>
<td></td>
<td></td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>c.</td>
<td>vi.#la₂...</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(23) Occurrence of the 1st forms after words ending in vowels:

<table>
<thead>
<tr>
<th></th>
<th>/para#{o₁ &gt; lo₂}#/.../</th>
<th>*C.V</th>
<th>ALIGNMWD-L</th>
<th>PRIORITY</th>
<th>ONSET</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>pa.ra.#o₁,...</td>
<td></td>
<td></td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>b.</td>
<td>pa.ra.#lo₂...</td>
<td></td>
<td></td>
<td></td>
<td>*</td>
</tr>
</tbody>
</table>

3. 3 Deletion of r and s

Among the consonantal sequences created by the cliticisation, only the sequence of r and s are deleted (Dubert 2001):

(24) a. /vir lo neno/  vi-lo neno | [bilo 'neno]  'to see the child' /vimos los nenos/  vimo-los nenos | [bimolos 'nenos]  'we see the children'
   b. facervos mal  [fa'ler'sos 'mal]  'to make you bad'
   visitarme  [bi'si'tarme]  'to visit me'
   vemos te espello  [bemos te es'peño]  'we see you in the mirror'
   collèdesnos rafia  [ko'ledesnos 'ra'fja]  'you make us angry'

(24a): If the sequence is a sequence of continuant consonants, r and s are deleted.
(24b): If the sequence is a continuant + stop sequence, r and s are not deleted.

⇒ r and s are deleted in order to avoid the sequence of continuant consonants (cf. Kikuchi 2005).

(25) OCP constraint against the sequence of continuant consonants

OCP[+cont]: Sequences of continuant consonants are avoided.

(26) ALIGNMWD-L >> OCP >> MaxC, Priority

(27) Deletion of r/s before the definite articles:

<table>
<thead>
<tr>
<th></th>
<th>/vir#{a₁ &gt; la₂}#/.../</th>
<th>ALIGNMWD-L</th>
<th>OCP</th>
<th>MaxC</th>
<th>Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>vi.r#la₁...</td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>vi.#la₁...</td>
<td>*!</td>
<td></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td>vi.#la₂...</td>
<td>*</td>
<td></td>
<td>*</td>
<td></td>
</tr>
</tbody>
</table>

(28) Non-deletion of the sequences other than r and s:

<table>
<thead>
<tr>
<th></th>
<th>/vemos#te.../</th>
<th>ALIGNMWD-L</th>
<th>OCP</th>
<th>MaxC</th>
<th>Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>ve.mos.#te</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>ve.mos.#te</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In Galician, there is no restriction against the consonantal sequence r or s both within a word and across a word boundary (Dubert 2001):

(29) a. /merlo/  [merlo]  'blackbird' /ser lacazán/  [ser laka'ðan]  'to be lazy'
   Carlos  [karlos]  'Carlos'
   desleal  [desle'ald]  'disloyal'
   lexislador  [leksilà'dor]  'legislator'

b. /merlo/  [merlo]  'blackbird' /ser lacazán/  [ser laka'ðan]  'to be lazy'
   Carlos  [karlos]  'Carlos'
   desleal  [desle'ald]  'disloyal'
   lexislador  [leksilà'dor]  'legislator'

(30) DOMAIN-CONTIGUITY (D-CONTIG; cf. Lamontagne 1997)

If the elements in the input are contiguous in a morphological domain, their output correspondents must be contiguous. No deletion within a morphological domain.

(31) D-CONTIG >> OCP >> MaxC
Non-deletion of \( r/s \) in word-internal position:

\[
\begin{array}{|c|c|c|}
\hline
\text{word} & \text{D-CONTIG} & \text{OCP} \\
\hline
\text{a. mer.\textunderscore lo} & * & \text{\textendash} \\
\text{b. me.\textunderscore lo} & *! & * \\
\hline
\end{array}
\]

- \( r/l \) and \( s/l \) in \( V + NP \) are not deleted because in this case the verb-final \( r/s \) and the noun-initial \( l \) are in the different PrWds and OCP is vacuously satisfied.

Non-deletion of \( r \) and \( s \) in \( V + NP \)

\[
\begin{array}{|c|c|c|}
\hline
\text{word} & \text{WdCONL} & \text{OCP} \\
\hline
\text{a. [VP [NP la\textunderscore ca\textunderscore zan]]} & *! & * \\
\hline
\text{b. [VP [NP es\textunderscore la\textunderscore ca\textunderscore zan]]} & *! & * \\
\hline
\end{array}
\]

Summary of constraint ranking:

- \( \text{WdCONL}, *C.V, \text{FNC} \# \text{PrWD}, \text{ALIGNMWd-L}, \text{D-CONTIG} \)
- \( \text{OCP} \gg \text{MAXC}, \text{PRIORITY} \gg \text{ONSET}, \text{ALIGNXP-L} \)

4 Concluding Remarks

In this paper, it is claimed that...

- The cliticisation of the definite articles to the preceding word is attributed to the alignment constraint between lexical categories and prosodic words.

- The Galician definite articles have the multiple underlying representations with the lexical priority relations and the allomorphic selection is accounted for by the interaction of \text{PRIORITY} with the morphological word alignment constraints.

Residual and related issues:

- The occurrence of the 1st forms after \( n \)-ending words:

  (35) comen o caldo \( [\text{komeno }\text{\textquoteright}kaldo] \) ‘we eat the broth’
  vin a casa \( [\text{\textquoteright}bina }\text{\textquoteright}kasa] \) ‘I saw the house’

- \( n \) is velarised in PrWd-final position (see 8). The fact that the verb-final \( n \) is not velarised in (35) shows that the definite article forms a syllable with the verb-final \( n \). The proposed ranking wrongly predicts the 2nd forms after \( n \)-ending words.

- Álvarez Blanco (1983) claims that there are the third allomorphs \( no/na/nos/nas \) which occur after \( n \)-ending words: \( \text{comen o } \rightarrow \text{comen-no} \). Then, the sequence of nasals coalesce to a single consonant: \( \text{comeno} \).

- The object pronoun allomorphy (Pérez Bouza 1996, Freixeiro 2001)

- The 3rd person object pronouns have three allomorphs whose distributions are similar to those of the definite articles, except for the existence of the \( n \)-forms:

  (36) The Galician object pronoun allomorphy

<table>
<thead>
<tr>
<th></th>
<th>MASC.</th>
<th>FEM.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SG.</td>
<td>o/lo/no</td>
<td>a/la/na</td>
</tr>
<tr>
<td>PL.</td>
<td>os/los/nas</td>
<td>as/las/nas</td>
</tr>
</tbody>
</table>

(37) a. \( lo/las/los/last \) after \( r/s \)-ending verbs and pronouns:

  /comer o/ \( \rightarrow [\text{komelo}] \) ‘to eat it’
  /di nos o/ \( \ightarrow [\text{dinolo}] \) ‘Don’t say it to us’

  b. \( no/na/nos/nas \) after verbs ending in diphthongs:

  /estou o faciendo/ \( \ightarrow [\text{es\textquoteright}towo fa\textquoteright\text{jendo}] \) ‘I am doing it’
  /deixou a/ \( \rightarrow [\text{dej\textquoteright}wowna] \) ‘he left it’

  c. Otherwise, \( o/a/os/as \):

  /come o/ \( \rightarrow [\text{komoe}] \) ‘s/he eat it’
  /fan o/ \( \rightarrow [\text{fano}] \) ‘they do it’

Issues

- The occurrence of the \( n \)-forms after words ending in diphthongs
- The difference between the definite article allomorphy and the object pronoun allomorphy
References