1 Purpose of this paper
To present an OT account of Catalan word-final deletion arguing for the positional markedness constraints - markedness constraints whose force is limited to some prominent positions.

2 Catalan word-final deletion
2.1 n-deletion (Mascaró 1976, Hualde 1992)
In Catalan, word-final $n$ is deleted if it is preceded by a stressed vowel:

(1) ple [plé] 'full (m. sg.)' cf. plena [pléna] 'full (f. sg.)'
catalá [kətəlá] 'Catalan (m. sg.)' cf. catalana [kətəlánə] 'Catalan (f. sg.)'
cósí [kuzí] 'cousin (m. sg.)' cf. cosina [kuzína] 'cousin (f. sg.)'

$n$ is not deleted if it is followed by the plural suffix -$s$:

(2) plens [pléns] 'full (m. pl.)' cf. ple [plé]
catalans [kətəlánəs] 'Catalan (m. pl.)' cf. catalá [kətəlá]
cosins [kuzíns] 'cousin (m. pl.)' cf. cosí [kuzí]

$n$ is not deleted if its preceding vowel is unstressed:

(3) áton [átun] 'atonic'
orígen [urízən] 'origin'

2.2 r-deletion (Mascaró 1976, Hualde 1992)
Word-final $r$ is deleted if it is preceded by a stressed vowel:

(4) primer [primé] 'first (m. sg.)' cf. primera [primèra] 'first (f. sg.)'
clar [klá] 'clear (m. sg.)' cf. clara [klára] 'clear (f. sg.)'
sencer [sənsé] 'whole (m. sg.)' cf. sencera [sənsèra] 'whole (f. sg.)'
Unlike the case of \( n \), \( r \) is deleted if it is followed by the plural suffix.

\( \Rightarrow \) \( r \)-deletion overapplies to \( r \) that is not word-final on the surface:

(5) \( \text{primers} \quad [\text{primés}] \quad '\text{first (m. pl.)}' \quad \text{cf.} \quad \text{primer} \quad [\text{primé}] \\
\text{clars} \quad [\text{klás}] \quad '\text{clear (m. pl.)}' \quad \text{cf.} \quad \text{clar} \quad [\text{klá}] \\
\text{sencers} \quad [\text{sənsés}] \quad '\text{whole (m. pl.)}' \quad \text{cf.} \quad \text{senser} \quad [\text{sənsé}] \\

\( r \) is not deleted when its preceding vowel is unstressed:

(6) \( \text{míser} \quad [\text{mízəɾ}] \quad '\text{miserable (m. sg.)}' \\
\text{mortífer} \quad [\text{murtífəɾ}] \quad '\text{deadly}'

2.3 The issues

➢ The nature of the deletion processes:
  • Why are \( n \) and \( r \) deleted in word-final position?
  • Why does stress play a crucial role?

➢ The different interaction with the plural suffixation:
  • Why does \( r \)-deletion overapply in plurals?

The rule-based analysis crucially depends on rule ordering:

(7) a. \( n \)-deletion \\
   \( n \not\in \emptyset / \tilde{V} \_# \)

b. \( r \)-deletion \\
   \( r \not\in \emptyset / \tilde{V} \_# \)

c. rule ordering: \( r \)-deletion \( \not\in \) plural suffixation \( \not\in \) \( n \)-deletion

➢ The rule-based analysis is problematic:
  • It is redundant to have two different rules that have the same result in the same context.
  • It cannot explain why it is the case where \( r \) but not \( n \) is deleted in plurals but not vice versa.

➢ In this paper, I propose a unitary OT analysis of Catalan deletion phenomena that accounts for the issues stated above, and argue for the positional markedness constraints.

3 An OT account of Catalan word-final deletion

3.1 Positional markedness constraints (de Lacy 2001)

Sonority constraint hierarchy (after Prince and Smolensky 1993)

(8) a. The margin sonority constraint hierarchy:
   \[ *\text{M(ARGIN)} / \text{X: X must not be parsed as a marginal position of a syllable}. \]
   \[ || *\text{M/vowel} \gg *\text{M/glide} \gg *\text{M/liquid} \gg *\text{M/nasal} \gg *\text{M/obstruent} || \]
b. The nucleus sonority constraints hierarchy:

\(*N(\text{ucleus})/X: X\) must not be parsed as a syllable nucleus.

\(\| *N/\text{obstruent} \gg *N/\text{nasal} \gg *N/\text{liquid} \gg *N/\text{glide} \gg *N/\text{vowel} \|

Positional markedness constraints in prominent positions:

- Sonority constraints (8) can be relativised to prominent positions, such as stressed syllable (\(\sigma\)).

(9) Sonority constraints in stressed syllables:

a. Margin sonority constraints in stressed syllables

\(*M-\sigma/X: X\) must not be parsed as a marginal position of a stressed syllable.

\(\| *M-\sigma/\text{vowel} \gg *M-\sigma/\text{glide} \gg *M-\sigma/\text{liquid} \gg *M-\sigma/\text{nasal} \gg *M-\sigma/\text{obstruent} \|

b. Nucleus sonority constraints in stressed syllables

\(*N-\sigma/X: X\) must not be parsed as a nucleus of a stressed syllable.

\(\| *N-\sigma/\text{obstruent} \gg *N-\sigma/\text{nasal} \gg *N-\sigma/\text{liquid} \gg *N-\sigma/\text{glide} \gg *N-\sigma/\text{vowel} \|

3. 2 Analysis

3. 2. 1 Deletion processes

\(n\)- and \(r\)-deletion are accounted for by the following schematic ranking:

(10) Schematic ranking for Catalan word-final deletion

\(*M-\sigma/X \gg \text{MAXIO} \gg *M/X\)

\((\text{MAXIO: Every segment in the input has its correspondent in the output.})\)

- The ranking \(*M-\sigma/X \gg *M/X\) is universally fixed, because they are in a stringency relationship: violations of \(*M-\sigma/X\) are always a subset of those of \(*M/X\).

(11) Word-final \(n\)-deletion

<table>
<thead>
<tr>
<th>/plèn/</th>
<th>*M-(\sigma)/nasal</th>
<th>MAXIO</th>
<th>*M/nasal</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. plèn</td>
<td>!</td>
<td>-</td>
<td>*</td>
</tr>
<tr>
<td>b. plè</td>
<td>-</td>
<td>*</td>
<td>-</td>
</tr>
</tbody>
</table>

(12) Word-final \(r\)-deletion

<table>
<thead>
<tr>
<th>/klár/</th>
<th>*M-(\sigma)/liquid</th>
<th>MAXIO</th>
<th>*M/liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. klár</td>
<td>!</td>
<td>-</td>
<td>*</td>
</tr>
<tr>
<td>b. klá</td>
<td>-</td>
<td>*</td>
<td>-</td>
</tr>
</tbody>
</table>
\textit{n/r} is not deleted in unstressed position because \textsc{MAX}_{IO} outranks \textsc{*M/X}:

(13) Non-deletion of \textit{n} in unstressed position

\begin{center}
\begin{tabular}{|l|c|c|c|}
\hline
& /\textit{átun}/ & \textsc{*M-\textsc{o}/nasal} & \textsc{MAX}_{IO} & \textsc{*M/nasal} \\
\hline
\textsc{a} & \textit{á.tun} & & & \\
\textsc{b} & \textit{á.tu} & & \textsc{*} & \\
\hline
\end{tabular}
\end{center}

(14) Non-deletion of \textit{r} in unstressed position

\begin{center}
\begin{tabular}{|l|c|c|c|}
\hline
& /\textit{mízer}/ & \textsc{*M-\textsc{o}/liquid} & \textsc{MAX}_{IO} & \textsc{*M/liquid} \\
\hline
\textsc{a} & \textit{míz\~{r}} & & & \\
\textsc{b} & \textit{míz\~{r}} & & \textsc{*} & \\
\hline
\end{tabular}
\end{center}

Word-final obstruent is not deleted. \(\Rightarrow\) \textsc{MAX}_{IO} is ranked between \textsc{*M-\textsc{o}/nasal} and \textsc{*M-\textsc{o}/obstruent}.

(15) Non-deletion of word-final obstruent

\begin{center}
\begin{tabular}{|l|c|c|c|c|}
\hline
& /\textit{kap} /'head'/ & \textsc{*M-\textsc{o}/liq} & \textsc{*M-\textsc{o}/nas} & \textsc{MAX}_{IO} & \textsc{*M-\textsc{o}/obs} \\
\hline
\textsc{a} & \textit{káp} & & & \textsc{*} \\
\textsc{b} & \textit{ká} & & & \textsc{*!} \\
\hline
\end{tabular}
\end{center}

Word-internal \textit{n/r} is not deleted. \(\Rightarrow\) \textsc{*M-\textsc{o}/X} are dominated by \textsc{DOMAIN-CONTIGUITY}.

(16) \textsc{DOMAIN-CONTIGUITY}:

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

(17) Non-deletion in word-internal position

\begin{center}
\begin{tabular}{|l|c|c|c|}
\hline
& /\textit{p\textsc{3}\textsc{t}\textsc{3}\textsc{a}} /'door'/ & \textsc{D-CONTIG} & \textsc{*M-\textsc{o}/X} & \textsc{MAX}_{IO} \\
\hline
\textsc{a} & \textit{p\textsc{3}\textsc{t}\textsc{3}\textsc{a}} & & \textsc{*} & \\
\textsc{b} & \textit{p\textsc{3}\textsc{t}\textsc{3}\textsc{a}} & & \textsc{*!} & \textsc{*} \\
\hline
\end{tabular}
\end{center}
3. 2. 2. Interaction with the plural suffixation

In the positional markedness approach, the different interaction between \( n \)- and \( r \)-deletion with the plural suffixation is accounted for by the different ranking of each *M-\( \sigma \)/X with respect to JUNCTURE-CONTIGUITY, a faithfulness constraint against skipping across a morpheme boundary.

(18) J(UNCTURE)-CONTIGUITY): If the elements in the input are contiguous across a morpheme boundary, their correspondents in the output must be contiguous.

\( n \) is not deleted in plurals. ⇒ J-CONTIG outranks *M-\( \sigma \)/nasal.

(19) Non-deletion of \( n \) in plurals

\[
\begin{array}{|c|c|c|}
\hline
\text{input} & \text{*M-\( \sigma \)/liquid} & \text{J-CONTIG} & \text{*M-\( \sigma \)/nasal} \\
\hline
\text{a. ku.zi₃₁₂₃} & \text{!} & \text{\Box} & \text{*} \\
\text{b. ku.zi₃₁₃₃} & \text{\Box} & \text{\Box} & \text{*!} \\
\hline
\end{array}
\]

\( r \) is deleted in plurals. ⇒ *M-\( \sigma \)/liquid outranks J-CONTIG.

(20) Deletion of \( r \) in plurals

\[
\begin{array}{|c|c|c|}
\hline
\text{input} & \text{*M-\( \sigma \)/liquid} & \text{J-CONTIG} & \text{*M-\( \sigma \)/nasal} \\
\hline
\text{a. klā₁₂₃₃} & \text{\Box} & \text{\Box} & \text{\Box} \\
\text{b. klā₁₃₃} & \text{\Box} & \text{\Box} & \text{\Box} \\
\hline
\end{array}
\]

- The apparent opacity of \( r \)-deletion in plurals can be accounted for as a simple interaction between faithfulness constraints and markedness constraints.
- The universally fixed ranking between *M-\( \sigma \)/liquid and *M-\( \sigma \)/nasal accounts for the fact that it is always the case where \( r \) but not \( n \) is deleted in plurals but not vice versa.

Summary of the ranking:

\[
\begin{align*}
\text{positional markedness} & \quad \text{general markedness} \\
\text{D-CONTIG} \Rightarrow \ldots \Rightarrow \text{*M-\( \sigma \)/liq \( \Rightarrow \text{*M-\( \sigma \)/nas \( \Rightarrow \text{*M-\( \sigma \)/obs} \Rightarrow \ldots \Rightarrow \text{*M/liq \( \Rightarrow \text{*M/nas} \Rightarrow \ldots }
\end{align*}
\]

\[
\begin{align*}
\text{J-CONTIG} & \quad \text{MAXIO}
\end{align*}
\]
4 Conclusion

➢ Deletion processes of word-final \( n \) and \( r \) in Catalan are uniformly accounted for by the positional markedness constraints.

➢ Universal rankings of the positional markedness constraints play a crucial role in this analysis:
  
  ❑ \( *M-6/X \gg *M/X \) accounts for the deletion in stressed syllables.
  
  ❑ The universal ranking within \( *M-6/X \) hierarchy accounts for the non-deletion of obstruents and the different application between the deletion processes in plurals.

Issues for future studies:

• Non-deletion of laterals
• Interaction with other phonological or morphological processes: stress assignment, cluster simplification, cliticisation.

References


