Overshoot in Positional Licensing

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1 A Problem, A Solution, and its Consequences

• Tudanca Montañés (Hualde 1989, Penny 1978): final high vowels centralize (shown with capitalization) and trigger harmony up to and including the stressed vowel:

(1) a. p´intU ‘male calf’
    p´inta ‘female calf’

b. sek´AlU ‘to dry him’
    sek´alo ‘to dry it’ (mass)

• Positional Licensing (PL; Walker 2011, among many others):

(2) License(λ, π): assign one violation mark for each element λ that does not coincide with some position π.

• For Tudanca: License([-ATR], ´σ) (assuming centralization = [-ATR] (Hualde 1989))

(3) /p´intu/ LICENSE([-ATR], ´σ) IDENT(ATR) H
    a. p´intU -1 -1 -5
    • b. p´intU -2

b. /or´eganu/ LICENSE([-ATR], ´σ) IDENT(ATR) H
    a. or´eganU -1 -1 -5
    (*) b. orÉgAnU -3 -6

• The new formalism developed in Kaplan (to appear): Positive Gradient PL (PG-PL):

(5) LICENSE(λ, π): assign +1 for each λ that coincides with some π, assign +1 for each additional position that λ coincides with.

• The pathology is gone:

(6) /or´eganu/ LICENSE([-ATR], ´σ) IDENT(ATR) H
    a. or´eganU +3 -1 -2
    • b. orÉgAnU +3 -3 3

• But by rewarding harmony outside the licensor, (5) motivates “overshoot”:

(7) /or´eganu/ LICENSE([-ATR], ´σ) IDENT(ATR) H
    a. orÉgAnU +3 -3 3
    (*) b. orÉgAnU +4 -4 4

• How should we prevent overshoot? Two options:

1. Define PL so that harmony beyond the licensor is not rewarded.
2. Use other constraints to blocks overshoot.

• My argument: PG-PL’s overshoot is advantageous, and therefore option 2 is best; PL itself shouldn’t discourage overshoot.

• Certain PL systems show overshoot under the right conditions: Tudanca Montañés, Eastern Andalusian

Kaplan (to appear): (2) is pathological in Harmonic Grammar (HG; e.g. Legendre et al. 1990).

Harmony incurs potentially many IDENT violations which can gang up on LICENSE:

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2 Two Sources of Centralization in Tudanca Montañés

2.1 Final Vowel Centralization
• Final high vowels centralize and trigger harmony up to the stressed syllable (1).
• Ident(−ATR)-pretonic (Canalis 2007, Kaplan 2015, Maiden 1995, Walker 2011) blocks overshoot:

(8) /orégu/  
\[
\begin{array}{|c|c|c|c|}
\hline
\text{LICENSE(−ATR)}, \sigma & \text{Ident(−ATR)} & \text{Ident(−ATR)-pretonic} & H \\
\hline
-3 & -3 & -1 & 2 \\
\hline
\end{array}
\]

⇒ Ident suppresses *Lab- [+ATR]V.


2.2 Labial-Induced Centralization
• Pretonic mid vowels centralize when adjacent to a labial:

(9) mEntika ‘pinky’  
gwEbéra ‘egg-basket’  
bOnúka ‘weasel’  
mOrlíya ‘blood-sausage’

• Other vowels normally do not centralize in this context:

(10) piyíkos ‘pinches’  
pínta ‘painted’ (fem)  
buíños ‘worms’  
púnta ‘stitch’  
pásar ‘to pass’  
máriños ‘pigs’

(11) a. /bonúka/  
\[
\begin{array}{|c|c|c|c|}
\hline
\text{*Lab- [+ATR]mid} & \text{Ident(−ATR)} & \text{*Lab- [+ATR]V} & H \\
\hline
-1 & -1 & -6 \\
\hline
\end{array}
\]

⇒ Ident suppresses *Lab- [+ATR]V.

2.3 When the Two Sources Converge
• However, non-mid vowels undergo labial-induced centralization just when final-vowel centralization/harmony also occurs:

(12) płyılıkU ‘pinch’  
ehpInÂûU ‘spinal cord’  
mUrñûU ‘stone’  
bUñAñU ‘worm’  
mAñAnU ‘pig’  
tAmbUñU ‘short and fat person’

• The pretonic vowels centralize because (i) they are labial-adjacent, and (ii) licensing-driven harmony also occurs.
• This is the overshoot predicted by positive Positional Licensing.
• (12) is produced by combining (8) and (11):

(13) /ehpInäTu/  
\[
\begin{array}{|c|c|c|c|}
\hline
\text{*Lab- [+ATR]mid} & \text{Lic} & \text{Ident(−ATR)} & \text{Ident(−ATR)-pretonic} & \text{*Lab- [+ATR]V} & H \\
\hline
\text{a. ehpInäU} & -1 & -1 & -5 \\
\text{b. ehpInÂûU} & +2 & -2 & -1 & 0 \\
\text{c. ehpInÂûU} & +3 & -3 & -1 & 1 \\
\text{d. EhpInÂûU} & +4 & -4 & -2 & 0 \\
\hline
\end{array}
\]

⇒ Because the summed weights of LICENSE and *Lab- [+ATR]V exceed Faithfulness, when centralization satisfies both of them, it is motivated.
• The previous results still obtain. On their own, neither LICENSE nor *Lab- [+ATR]V can overcome Faithfulness.
PG-PL’s encouragement of overshoot is crucial:

\[
\begin{array}{cccccc}
\text{/ehpin\'{a}tu/} & \text{** Lic(\text{ATR})-pre} & \text{** Lic(\text{ATR})} & \text{** Lic(\text{ATR})} & H \\
\text{a. elpIn\'{a}U} & +2 & -3 & -1 & -3 \\
\text{b. elpin\'{a}U} & +2 & -2 & -1 & 0 \\
\end{array}
\]

Summary:
- Tudanca Monta\~nes exhibits the overshoot that PG-PL predicts.
- PG-PL provides a simple analysis; where necessary, overshoot is blocked by other constraints.

3 Harmony in Eastern Andalusian

3.1 s-Aspiration, Laxing, and Harmony

- Vowel harmony in Eastern Andalusian (Jiménez & Lloret 2007, Lloret & Jiménez 2009) provides similar evidence for overshoot-inducing PL.
- s-Aspiration: Word-final (more generally, coda) /s/ deletes, triggering laxing of now-word-final vowel:

\(\text{mes}\) \(\text{mE}'\text{month}'
\(\text{tos}\) \(\text{tO}'\text{cough}'

- This triggers harmony on the stressed vowel:

\(\text{monos}\) \(\text{m\'{i}nO}'\text{monkeys}'
\(\text{tesis}\) \(\text{t\'{i}sI}'\text{this}'
\(\text{lejos}\) \(\text{l\'{e}hO}'\text{far}'

- Two optional extensions of this harmony:

\(\text{treboles}\) \(\text{tr\'{i}bOlE}\sim\text{tr\'{i}bOlE}'\text{clovers}'
\(\text{c\'{o}metelos}\) \(\text{k\'{o}mEtElO}\sim\text{k\'{o}mEtElO}'\text{eat them (for you)!}'

\(\Rightarrow\) If one post-tonic vowel harmonizes, they all do.

3.2 Analysis

- Optionality in HG = variation in constraint weights (Hayes 2017, Jesney 2007)
- The full range of patterns emerges with PG-PL, \text{Ident(\text{ATR})}, and \text{Ident(\text{ATR})}-pretonic simply by changing \text{License}'s weight:

\[
\begin{array}{cccc}
\text{Variable Post-tonic Harmony} \\
\text{a. } /\text{k\'{o}metelos/} \text{ License([–ATR], }\sigma) & \text{ Ident(\text{ATR})} & H \\
\text{a. k\'{o}metelo} & +2 & -3 & -3 \\
\text{b. k\'{o}metelo} & +2 & -2 & 2 \\
\text{c. k\'{o}metelo} & +4 & -4 & 4 \\
\text{d. k\'{o}metelo} & +3 & -3 & 3 \\
\end{array}
\]

\(w(\text{License}) > w(\text{Ident})\)

\[
\begin{array}{cccc}
\text{b. } /\text{k\'{o}metelos/} \text{ License([–ATR], }\sigma) & \text{ Ident(\text{ATR})} & H \\
\text{a. k\'{o}metelo} & +2 & -2 & -2 \\
\text{c. k\'{o}metelo} & +4 & -4 & -4 \\
\text{d. k\'{o}metelo} & +3 & -3 & -3 \\
\end{array}
\]

\(2w(\text{License}) > w(\text{Ident}) > w(\text{License})\)

\(\Rightarrow\) Pretonic vowels optionally harmonize: candidate (d) is collectively harmonically bounded by (b) and (c).

\(\Rightarrow\) If one post-tonic vowel harmonizes, they all do.
Variable Pretonic Harmony

<table>
<thead>
<tr>
<th>/monedéros/</th>
<th>LICENSE([–ATR], σ)</th>
<th>IDENT(ATR)</th>
<th>IDENT(ATR)-pre</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. moneðerO</td>
<td></td>
<td>−1</td>
<td></td>
<td>−3</td>
</tr>
<tr>
<td>b. moneðerO</td>
<td>+4</td>
<td>−4</td>
<td>−2</td>
<td>8</td>
</tr>
<tr>
<td>c. moneðerO</td>
<td>+2</td>
<td>−2</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>d. moneðerO</td>
<td>+3</td>
<td>−3</td>
<td>−1</td>
<td>7</td>
</tr>
</tbody>
</table>

2wLICENSE > wIDENT + wIDENT-pretonic > wLICENSE

- Coordination among pretonic vowels is predicted: candidate (d) is collectively harmonically bounded by (b) and (c).
- Pretonic harmony entails post-tonic harmony:
  - If wLICENSE > wIDENT + wIDENT-pretonic, then wLICENSE > wIDENT

Factorial Typology (OT-Help; Staubs et al. 2010): 4 languages:

a. Harmony only on stressed vowel (Eastern Adalusian)
b. Harmony on stressed vowel and all post-tonic vowels (Eastern Adalusian)
c. Harmony everywhere (Eastern Adalusian)
d. No Harmony

- The No Harmony language emerges when it is not the case that 2wLICENSE > wIDENT (from (19b) and (20b)). Therefore, this is the only condition Eastern Andalusian imposes on these constraints.

3.3 Summary

- Without overshoot from PG-PL, the analysis cannot produce pretonic harmony.
- Walker (2011): an OT-based analysis using traditional PL (very much like the one presented here). Since traditional PL doesn’t trigger overshoot, the analysis requires a second PL constraint (“Maximal Licensing”) specifically designed to trigger harmony everywhere.

4 Conclusion

- PG-PL makes an analysis of Tudanca Montaños available, and it offers a simple account of Eastern Andalusian.
- The proper way to prevent overshoot is by suppressing it with other constraints, not defining PL so that it cannot trigger it.
- PG-PL combines both traditional PL and Walker’s Maximal Licensing—no need for two different formalisms.

References


