Final Devoicing in French

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Regards croisés sur la phonologie du français contemporain
‘Parisian’ French

- Contrast before sonorants: a[d]mirer, ca[d]enas, a[k]né, o[s]mose, a[t]las, pa[t]elin
Outline of talk

- In a famous paper, Wetzels and Mascaró (2001) claim that this is evidence for active [-voice] in French
- We will provide an alternative, OT analysis which is based on:
  - Privative [voice]
  - The idea that Parisian French has Final Devoicing
  - but this constraint is representationally more refined than usually assumed
- Crucial evidence will come from French dialects which do have Final Devoicing
Structure of talk

Standard French
   Final Devoicing
   Licensing by Position revisited

Two northern dialects
   Walloon
   Vimeu Picard
Final Devoicing in French

Standard French
Final Devoicing
Licensing by Position revisited

Two northern dialects
Walloon
Vimeu Picard
Final Devoicing

- Catalan:
  - *gris* ‘grey (M)’ - *grizə* ‘grey (F)’
  - *gos* ‘dog (M)’ - *gosə* ‘dog (F)’

- Dutch:
  - *kwaa[t]* ‘angry (PRED.)’ - *kwadə* ‘angry (ATT)’
  - *laat* ‘late (PRED.)’ - *latə* ‘late (ATT)’

- German:
  - *Rad* ‘wheel (NOM. SG.)’ - *Rades* ‘wheel (GEN.SG.)’
  - *Rat* ‘council (NOM.SG.)’ - *Rates* ‘council (GEN.SG.)’
What is Final Devoicing?

- We can find many definitions of Final Devoicing in the OT literature.
- Two schools of thought:
  - Licensing by position: [voice] is only allowed in certain syllable positions (e.g. onsets; Lombardi 1999)
  - Licensing by cue: [voice] is only allowed in certain phonetically defined positions (e.g. before sonorants; Steriade 1997)
- Final Devoicing does not apply in any of these definitions.
No Final Devoicing as (simple) Licensing by Position

- **FINDEV**: *[voice]/Coda
- is counterexemplified by *a[d]mirer*

“the facts of the real language [=French] are unintelligible under prosodically based analyses of voice neutralization” (Steriade 1997)
No Final Devoicing as (simple) Licensing by Cue

- FINDEV: [voice] needs a cue in a following sonorant
- is counterexemplified by e.g. laide ‘ugly’ [lɛd] - Lette ‘Latvian’ [lɛt]
Falsification of Licensing by Cue

- Steriade (1997) points out that a language in which there is contrast in obstruents before tautosyllabic sonorants, but not before heterosyllabic ones, would constitute a falsification.

Catalan and Dutch are ‘Fictitious French’

Wheeler (2005) points out that Catalan is ‘Fictitious French’: there is a voicing contrast in *clar* ‘clear’ [kla] vs. *gla* ‘acorn’ [gla], but not across syllable boundary, as in *poc lògic* ‘not very logical’.

Dutch might be another (possibly even more convincing case), since it does have final devoicing before sonorants: there is no contrast *atlas* - *adlas*, and words such as *Ariadne* would typically be pronounced with voiceless [t], *pace* Steriade.
Towards a more sophisticated Licensing by Position

- **FINDEV**: [voice] needs to be licensed in an onset.
- $\alpha$ is licensed by $\beta$ **iff** there is a path from $\alpha$ to $\beta$. 
**Being licensed**

\[
\begin{array}{cccc}
\text{*distin[gt]if} & \text{distin[ct]if} & \text{a[dv]ersaire} & \text{dé[sv]er} \\
C & O & C & O \\
\text{[voice]} & \text{[voice]} & \text{[voice]} & \text{[voice]} \\
\ & \ & \ & \\
X & X & X & X \\
\end{array}
\]
This means that sonorants need to have a voicing specification, at least in cases such as \textit{a[dm]irer}.

\textit{[sonorant]} \supset \textit{[voice]} \gg \textsc{faith}-\textit{[voice]}
Licensing by Position revisited

What about word-final consonants?

- Word-final consonants in French are assumed to be in onsets of otherwise empty syllables, hence voicing is licensed.
- There are additional reasons to assume this:
  - The famous geographic/sociolinguistic alternations between œ and ø
  - The fact that words can end in consonant clusters of rising sonority (table etc.)
  - This allows for a uniform analysis of French words/phrases in all dialects ending in a trochee, with a weak syllable headed by schwa or nothing
Regressive voicing

- This should obviously be analysed as a separate process, since it also has separate properties (its optionality)
- Due to a freely rankable constraint ALIGN([voice], Left)
- The fact that this cannot lead to [a3ve] is an instance of a so-called *grandfather effect* (McCarthy 2004), and should be treated as such:
  - Using ’Comparative Markedness’ (McCarthy 2004)
  - Using ’Enriched Faithfulness’ (Hall 2006):
    IDENT-[+VOICE] ≫ *3 ≫ ALIGN
Interim conclusions

- Parisian French is a dialect with Final Devoicing
- Final Devoicing can be and should be seen in terms of Licensing by Position (*pace* Steriade)
- We do not need to refer to [-voice] (*pace* Wetzels and Mascaró)
Final Devoicing in French

Standard French
Final Devoicing
Licensing by Position revisited

Two northern dialects
Walloon
Vimeu Picard
Walloon Devoicing

- Word-final devoicing: *wåde-lu* ‘keep it’ [wɔdly] vs. *wåd’-ler* ‘to support mine walls with billets’ [wɔdle] (Liège)

- Word final obstruents assimilate in voicing to following obstruents: *lu bo[g] du vèjin* ‘the neighbour’s ram’, *oune gran[t] fèye* ‘a big girl’ (Bastogne)

- Fricatives are voiced finally when followed by a vowel: *dèl frize èwe* ‘some cold water’, cf. *l’èwe est frisse* ‘the water is cold’ (Liège)

- Syllable-final devoicing of fricatives: *amûsmint* ‘amusement’, *mouvement* ‘movement’ [mufmĩ] (Liège)

(Data mostly from Francard and Morin 1986)
How is final devoicing possible?

- If French already displays Final Devoicing, how can Walloon dialects have it even more?
- We propose that this is the reflex of a difference in syllable structure. Word final consonants
  - are onsets in French
  - are codas in Walloon
Final Devoicing in French

Walloon

**laide**

French  
\[
\begin{array}{c}
\sigma \\
O \\
\varepsilon \\
\text{[voice]}
\end{array}
\]

Walloon  
\[
\begin{array}{c}
\sigma \\
O \\
\varepsilon \\
t
\end{array}
\]
Independent evidence

- The most important argument in favour of the assumption that word final consonants are onsets in French, is that they can form clusters.
- However, these clusters have been simplified in Walloon.
- This gives strong support to the assumption that they are syllabified differently, i.e. in codas.

<table>
<thead>
<tr>
<th>underlying form</th>
<th>isolation</th>
<th>prevocalic</th>
</tr>
</thead>
<tbody>
<tr>
<td>/trist/</td>
<td>[tris] ‘sad’</td>
<td>[tristɛs] ‘sadness’</td>
</tr>
<tr>
<td>/mɛspl/</td>
<td>[mɛs] ‘meddlar’</td>
<td>[mɛspliː] ‘meddlar-tree’</td>
</tr>
</tbody>
</table>
Like French, many dialects of Walloon do not seem to have syllable-final devoicing of obstruents (cf. wåd’-ler).

This is expected, since in this case the syllable boundaries are the same in the two systems.

However, Walloon does have devoicing of fricatives in this position: amûsmint ‘amusement’, mouvemint ‘movement’ [mufmẽ] (Liège) T ‘h’is devoicing of fricatives is still “well-established in current regional French of Liège”
How can we understand this?

- Notice that the relevant environment most often is fricative-nasal.
- This is a notorious environment, subject in many languages to Padgett’s Generalisation (Padgett 1994):
  - If [+nas,+cons] then [-cont]
    ‘Nasals may not be linked to continuants’
- Padgett discusses this generalisation mostly in connection to place assimilation.
Implications of Padgett’s Generalisation

- In many languages which have assimilation of nasals to stops, there is no assimilation to fricatives (impopular, infallible)
- Languages may instead try harden the fricative, delete it, etc.
- The following representation is bad because [nasal] and [-cont] come to close together:

```
  m
     \_________f
         [nasal] [labial] [-cont]
```
I propose to generalise Padgett’s generalisation also to cases of voicing assimilation:

\[ \begin{array}{c}
\text{v} \\
\text{[voice]} \\
\text{m} \\
\text{[voice]} \\
\text{[nasal]} \\
\end{array} \]
Vimeu Picard

- Voiced plosives are nasalised next to a nasal: *rudemint* /rydɛ̃/ → [ryn̩m̩] (cf. *rude* [ryd]), *gamme* /gɑ̃b/ → [ɡɑ̃m] (cf. *gamber*)
- Voiceless nasals don’t nasalise: *lampe* /laⁿp/ → [lãmp]
- No word-final devoicing: *tube* /tyb/ → [tyb]

(data mostly from José and Auger)
The Too Many Repairs Problem

Devoicing: /tæb/ → /tæp/
Lenition: /tæb/ → /tæj/
C Deletion: /tæb/ → /tæm/
Segment reversal: /tæb/ → /bæt/
Feature reversal: /tæb/ → /dæp/
V insertion: /tæb/ → /tæbə/
Nasalisation /tæb/ → /tæm/  
(Steriade 2001)
Nasalisation is no repair

- Under the present approach, nasalisation is not a possible repair for final devoicing:

\[
\begin{array}{c}
  \text{Voice} \\
  \text{x} \\
  \text{[d]} \\
  \text{x} \\
  \text{Voice Nasal} \\
  \text{[n]}
\end{array}
\]

- We keep the feature [voice], which violates the relevant constraint.
Nasalising and devoicing

\[ d \rightarrow n \]

Voice \rightarrow Voice Nasal
**Harmonic Bounding**

<table>
<thead>
<tr>
<th>/tæb/</th>
<th>FINDEV</th>
<th>FAITH(Voice)</th>
<th>FAITH(Nasal)</th>
</tr>
</thead>
<tbody>
<tr>
<td>tæb</td>
<td>*!</td>
<td></td>
<td></td>
</tr>
<tr>
<td>♪tæp</td>
<td></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>tæm</td>
<td>*!</td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>tæm</td>
<td></td>
<td>*</td>
<td>*!</td>
</tr>
</tbody>
</table>
Analysis

- [nasal]⊃[voice], (Itô, Mester and Padgett 1994)
- Dock: Nasal features on a vowel need to be supported by nasal features on the rhyme.
Tableau I

<table>
<thead>
<tr>
<th>/tyb/</th>
<th>FAITH(Voice)</th>
<th>[nasal]⊃[voice]</th>
<th>Dock</th>
</tr>
</thead>
<tbody>
<tr>
<td>⚠️ [tyb]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>[typ]</td>
<td>*!</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Tableau II

<table>
<thead>
<tr>
<th>/gɑ̃b/</th>
<th>FAITH(Voice)</th>
<th>[nasal] ⊃ [voice]</th>
<th>DOCK</th>
</tr>
</thead>
<tbody>
<tr>
<td>[gãb]</td>
<td></td>
<td></td>
<td>*!</td>
</tr>
<tr>
<td>[gãm]</td>
<td>☞</td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>[gãm̪]</td>
<td>☞</td>
<td></td>
<td>*</td>
</tr>
</tbody>
</table>
Tableau III

<table>
<thead>
<tr>
<th>/lап/</th>
<th>FAITH(Voice)</th>
<th>[nasal]&gt;[voice]</th>
<th>Dock</th>
</tr>
</thead>
<tbody>
<tr>
<td>[lап]</td>
<td></td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>[лам]</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>[лам]</td>
<td></td>
<td>*</td>
<td></td>
</tr>
</tbody>
</table>
Interestingly, fricatives are not nasalised

- *mince* ‘thin’ [mẽs], *tchinze* ‘fifteen’ [tʃẽz]
- This must be a result again of Padgett’s Generalisation
Conclusions

- Final Devoicing is operative in many (Northern) varieties of French
- even if its effects are sometimes hidden
- The differences between French and Walloon are \textit{not} due to a difference in a FD ‘parameter’, but to a difference in syllabification
- Vimeu Picard nasalisation is not due to Final Devoicing; there is no word-final devoicing of the Walloon type in Picard, not even hidden (\textit{pace} José and Auger)
The voicing behaviour of nasals

- In our analysis of Picard, we make crucial use of the fact that nasals (sonorants) must be voiced.
- In our analysis of Parisian French, we used the fact that sonorants can be voiced (to explain why admirer is well-formed)
- However, this raises the question why we do not find regressive voicing assimilation (*adlas) like we find it after
- Such voicing assimilation is found e.g. in Catalan (Wheeler 2005):
  - *hi[bn]osi, è[dn]ic, ri[dm]e, ca[zn]otable*
The dual nature of voicing on sonorants

- It is already well-known that sonorants have an ambiguous behaviour with respect to voicing.
- E.g. the famous interaction of Japanese Rendaku and Lyman’s Law:
  - In certain compounds, the initial obstruent of the second part gets voiced: ore+kami → oregami
  - But this does not work if there already is a voiced obstruent in this second part: kami+kaze → kamikaze (*kamigaze)
  - Witness, oregami, nasal m does not count as voiced
  - At the same time, sonorants do voice the following obstruent: *tompo/*tombo
Constraints

- **SONVOI**: Sonorants should be voiced. Son $\supset$ Voi
- **LICENSE**(F): A phonological feature must be licensed.
  $\forall F \exists G: GxF$
- Licensing cancellation: If F implies G, F does not license G. $F \supset G \Rightarrow \neg (FxG)$
Tableau

<table>
<thead>
<tr>
<th>kami</th>
<th>LICENSE</th>
<th>SONVOI</th>
</tr>
</thead>
<tbody>
<tr>
<td>kami</td>
<td>*!</td>
<td></td>
</tr>
<tr>
<td>kami</td>
<td></td>
<td>*</td>
</tr>
</tbody>
</table>
### Tableau

<table>
<thead>
<tr>
<th>tombo</th>
<th>LICENSE</th>
<th>SONVOI</th>
<th>IDENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>*</td>
<td></td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>tombo</td>
<td></td>
<td>!</td>
<td>!</td>
</tr>
</tbody>
</table>

**Final Devoicing in French**
Feature licensing may be one way of formalizing the ambiguous nature of sonorants with respect to voicing.

Different ranking of LICENSE and SONVOI may explain differences between Catalan and French.