Laryngeal realism revisited: voicelessness in Breton

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Laryngeal realism revisited: voicelessness in Breton

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Plan

▶ Setting the scene, Part I: laryngeal realism, Element Theory, and the status of H
▶ Setting the scene, Part II: pre-sonorant voicing and its interpretation
▶ Bothoa Breton is a “H language” phonologically despite its Romance-like obstruent system
▶ Added bonus: there is a ternary contrast on the surface, and it is better implemented in feature-geometrical terms

Laryngeal realism

▶ Classic position: [±voice] is all there is, most recently Wetzels & Mascaró (2001)
  ▶ “L languages” (Romance, Slavic, Dutch?, Yiddish?): short-lag VOT vs. consistent prevocing in stops — ∅ vs. [voice];
  ▶ “H languages” (English, German, Welsh, Turkish): long-lag VOT vs. variably voiced stops — [spread glottis] vs. ∅.
▶ Similar approaches in GP/DP/Element Theory (e.g. Harris 1994, 2009; Harris & Lindsey 1995; Backley 2011)

Phonetic essentialism: some issues

▶ Issue 1: H often associated with [spread glottis] — undue focus on stops and VOT
  ▶ Logically, glottal spreading does not necessarily entail positive VOT, it can just inhibit voicing
  ▶ Inconsistent with surface behaviour (e.g. English coda glottaling)
▶ Issue 2: phonetic bias
  ▶ H languages often tend to have variable voicing in stops: assumed to be “passive”, reflecting its lack of specification (e.g. Jessen & Ringen 2002; Jansen 2004; Honeybone 2005)
Phonetic and phonological patterning

- What if we only look at phonological patterns when dealing with phonological representations?
- Phonetics should not determine phonology (cf. Rice 1994, *passim*).
- It should be logically possible to have a “H language” with “L-type” phonetics.
- E.g. with H stops realized with short-lag VOT.
- Rather obvious proposal.
  - GP/DP circles: Cyran (2010, 2011);
  - Also Blaho (2008).
- Problem: evidence sometimes hinges on pre-sonorant voicing.
- Cyran (2011) on Kraków/Poznań Polish: PSV is the mirror image of final devoicing, i.e. H deletion.

Representational solution

- The representational solution is to assume that PSV derives from the same surface underspecification process that gives variable voicing of lenis stops in H languages.
- Colina (2009) for Ecuadorian Spanish.
- Cyran (2011) for Kraków/Poznań Polish.
- Solves the phonological problems very nicely.
- But is PSV phonological?
The proposal I

- Bothoa Breton (Humphreys 1995) contrasts three types of consonants on the surface:

<table>
<thead>
<tr>
<th>Voiceless</th>
<th>Delaryngealized obstruents</th>
<th>Voiced</th>
<th>Sonorants</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>X</td>
<td>X</td>
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</tr>
<tr>
<td>C-lar</td>
<td>C-lar</td>
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</tbody>
</table>

- In other words, voiced obstruents are less structurally marked than voiceless obstruents (Causley 1999; Rice 2003)

The proposal II

- Explicit formulation of an old insight:
  - Krämer (2000): Onset Voicing
  - Hall (2009): Default Voicing

- Key criteria
  - Phonological activity of [voiceless];
  - No phonological activity of [voice] separate from [voiceless];
  - Word-final delaryngealization: evidence from interaction with floating features supports the surface-underspecification treatment of pre-sonorant voicing

Inventory

- The segment [h] is isolated, but is it [voiced] or [voiceless]?

- Obstruent system Romance-like with prevoicing (Bothorel 1982; Humphreys 1995)

<table>
<thead>
<tr>
<th>Manner</th>
<th>Labial</th>
<th>Coronal</th>
<th>Postalveolar</th>
<th>Palatal-velar</th>
<th>Palatal</th>
<th>Dorsal</th>
<th>Glottal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stops</td>
<td>p b</td>
<td>r d</td>
<td></td>
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<td>k g</td>
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<td>Affricates</td>
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<td>Approximants</td>
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</tbody>
</table>

- Actually, can be either, depending on context:
  - [h] or [ħ] word-initially, before a (voiceless) consonant, word-medially after [l r]
  - [x] utterance-finally or word-finally
  - [ɾ] or [ɣ] in voiced contexts

- Phonologically, it is clearly voiceless

Word-level phonology

- I give suffixed forms to avoid final devoicing

- Assimilation:

  1. a. (i) [esˈkɔbjan] 'bishops'
     (ii) [esˈkɔpti] 'diocese'
  b. (i) [ˈtom] 'warm'
     (ii) [ˈtomˌð̪ar] 'heat'
     (iii) [ˈze:ho] 'to dry'
     (iv) [ˈzɛhˌð̪ar] 'drought'

- Preservation of the marked (Causley 1999; de Lacy 2006): assimilatory neutralization preserves the bigger structure
Assimilation: the geometry

- Assume something compels two adjacent obstruents to share a laryngeal specification...
- ...and don’t think too much about delinking vs. coalescence of C-lar nodes...

\[
\begin{align*}
\text{C-lar} & \quad \text{C-lar} & \quad \text{C-pl} & \quad \text{C-man} \\
\text{[vcl]} & \quad \text{[cor]} & \quad \text{[cl]} \\
\end{align*}
\]

Why is this important?
- Because postlexically the situation is quite different

Complications

- In fact, obstruent clusters are mostly voiceless in Bothoa Breton

(2) a. (i) \([\text{an'}\text{we}z\text{zo}]\) ‘to offend’
   (ii) \([\text{an'westor}]\) ‘humiliation’

b. (i) \(['kaz\text{og}]\) ‘cat’
   (ii) \(['bjan]\) ‘small’
   (iii) \(['kaspjan]\) ‘kitten’

- Some sort of licensing requirement forcing the addition of [voiceless] to multiply linked C-lar (cf. van Oostendorp 2003)

Further evidence for [voiceless]

- “Provection”: associated with certain suffixes
  - Voiced obstruents devoice
  - Vowels in closed syllables shorten
  - Voiceless obstruents and sonorants unaffected

(3) a. (i) \([\text{fe}b\text{li}\text{ʒə}n]\) ‘weakness’
   (ii) \('[\text{fe}b]\) ‘weak’
   (iii) \('[\text{fep}oh]\) ‘weaker’

b. (i) \('[\text{ka}z\text{og}]\) ‘cat’
   (ii) \('[\text{ka}\text{s}d]\) ‘to be on heat (of cats)’
Analysis

- I suggest the facts are best analysed with a floating mora associated with a C-lar[vcl] feature

\[ \sigma \quad [vcl] \quad \mu \quad [cl] \quad \mu \quad [lab] \]

- Evidence for the activity of [voiceless]
- Some forms still retain the [h]: ['skāː] 'light', ['skāː(h)] 'lighter'

Word-level phonology: summary

- Apart from final devoicing (to which we return), there is little evidence for the marked status of voiced obstruents
- In particular, they are not triggers of assimilation
- Voiceless obstruents and [h] demonstrate phonological activity:
  - Preservation in assimilation
  - Triggers in additive processes
- Important generalization: at the word level, obstruent clusters neutralize to voiceless

ER Robust evidence for the phonological activity of [voiceless]

Further evidence for [voiceless]: the protractive mutation

- Triggered by certain proclitics
- Voiceless obstruents unaffected; voiced ones devoice

(4) a. (i) ['kaːz]  'cat'
   (ii) [o 'kaːz]  'your (pl.) cat'

b. (i) ['brɔː:r]  'brother'
   (ii) [o 'prɔː:r]  'your (pl.) brother'

- Vowel and sonorants are prefixed with [h]:

(5) a. (i) ['alve]  'key'
   (ii) [o 'halve]  'your (pl.) key'

b. (i) ['lɛvər]  'book'
   (ii) [o 'lɛvər]  'your (pl.) book'

- Best analysis: [h] coalescing with obstruents
- Corollary: [h] is [voiceless]

Pre-sonorant voicing

- Bothoa Breton seems to have it

(6) a. (i) ['kogɔw]  'roosters'
   (ii) [kɔj iz'maj]  'Yves-Marie’s rooster'

b. (i) ['tɔkɔw]  'hats'
   (ii) [on ,tɔq 'ał]  'another hat'

- Although it doesn’t sound very phonological
  - Il faut se rappeler […] que l’alternance sourde/sonore, qui représente la catégorie plus importante de ces modifications, n’est pas, sur le plan phonétique, un simple choix binaire : on rencontre assez souvent, non seulement des sourdes douces, mais aussi des consonnes à sonorité décroissante. Plus le débit rapide et l’articulation relâchée, plus les assimilations sont poussées. » (Humphreys 1995)
Pre-sonorant voicing

- Phonetic data not available
- Still, I analyse this (and final devoicing) as word-final delaryngealization à la Jansen (2004); Colina (2009)
- Crucially, there is more evidence for the lack of specification
- One piece of evidence is that word-final obstruents become *voiced* before voiced obstruents

\[(7) \quad \text{a. } [ˈlɒst] \quad \text{‘tail’} \]
\[\text{b. } [ˌlɒzd ˈbeːr] \quad \text{‘short tail’} \]

- Which is precisely the opposite of what happens at the word level
- But couldn’t this just be a reranking at different strata? Well, yes

Devoicing sandhi, part I: lenition

- The lenition mutation involves voicing of stops

\[(8) \quad \text{a. } [\text{pɔwɛr}] \quad \text{‘poor’} \]
\[\text{b. } [\text{o ˌvroː ˈbowɛr}] \quad \text{‘a poor country’} \]

- Under the present assumptions, it must be the docking of a floating C-lar node

\[
\begin{array}{c}
\text{p} \rightarrow \text{b} \\
\text{C-lar} \quad \mid \quad \text{C-lar} \quad \mid \quad \text{C-pl} \quad \mid \quad \text{C-man} \\
\mid \quad \mid \quad \mid \quad \mid \\
\text{[vcl]} \quad \mid \quad \text{[lab]} \quad \mid \quad \text{[cl]} \\
\end{array}
\]

Devoicing sandhi, part II: the sandhi

- Some words beginning with voiced stops in isolation undergo devoicing when following an obstruent (Krämer 2000; Hall 2009)

\[(9) \quad \text{a. } [ˈɡaːnte] \quad \text{‘with them’} \]
\[\text{b. } [də ˈɡaːs ˈkɑnte] \quad \text{‘to carry with them’} \]
\[\text{c. } [də ˈɡaz ɡañtæ] \]

- Crucially, the same unexpected voiceless cluster is found in lenition contexts (although it is usually described as a “failure of lenition”)

\[(10) \quad \text{a. } [ˈkoːʒ] \quad \text{‘old’} \]
\[\text{b. } [o ˌgaːdər ˈgoːʒ] \quad \text{‘an old chair’} \]
\[\text{c. } [on ˌiːli ˈskoːʒ] \quad \text{‘an old church’} \]
\[\text{d. } [on ˌiːliz ˈgoːʒ] \]

Analysis

- I suggest that both types of phenomena can be unified in terms of a C-lar floating node
- It is better to dock to an unspecified obstruent than to a specified one
- If there is no suitable site to the left (sonorants and vowels cannot be laryngeally specified), dock to the right \( \rightarrow \) lenition.
Analysis

- If there is a suitable site to the left, dock there
- (Stratal alert!) Word-final obstruents come delaryngealed from the word level
- Docking to the left creates a domain for the spreading of [voiceless]

```
\[\text{d̥gas} \rightarrow \text{kantæ}\]
```

- C-pl C-lar C-lar C-man
  - [cor] [vcl] [cl]

How is that evidence for underspecification?

- Normally, C-lar[vcl] does not spread across a word boundary
- Sequences of a nasal and a (delaryngealed) stop undergo variable progressive assimilation of nasality in pre-sonorant position

```
(11) a. [\ˈdæn:\] 'tooth'
    b. [\ˈdænd əl] 'another tooth'
```

- In this respect, they differ from sequences of a nasal and a stop that has acquired a floating C-lar[vcl] feature (again!)

```
(12) a. Floating C-lar[vcl]
    (i) [om] 'our'
    (ii) [\ˌtʊt om ˈʌməɹ] 'all our time'
    (iii) *[\ˌtʊd om ˈʌməɹ]
    b. After nasals
    (i) [\ˈɡæn t i ˈhwɛːɹ] 'with his sister'
    (ii) *[\ˌɡɑːn i ˈhwɛːɹ]'
```

No [vcl] spreading across a word boundary

- Familiar analysis...

```
\[\text{tud} \rightarrow \text{t} \{h\}om\]
```

- C-man C-pl C-lar
  - [cl] [cor] [vcl]

- But the C-lar[vcl] from an actual segment does not do this:

```
(13) a. [\ˌdɛn \ˈhiːɹ] 'long teeth'
b. *[\ˌdɛnt \ˈhiːɹ]
```

Conclusion

- (There is a similar story to be told about prefixes)
- Both at the lexical and the postlexical level, there is ample evidence for the marked nature (phonological activity) of the feature [voiceless]
- The evidence for the phonological activity of [voice] is weak, despite the phonetics
- Crucially, a distinction must be made between contrastive non-specification (bare C-lar) and underspecification (no C-lar)
- Laryngeal underspecification of word-final obstruents makes sense even if we do not view pre-sonorant voicing as an argument
- But it surely is a nice result for the surface-underspecification theory of PSV
Problems with phonetic essentialism I

- There are two types of empirical problems with laryngeal realism
  - Unexpected categoricity
    - An “H language” like German is predicted to have variable/“passive” voicing of lenis stops
    - Apparently borne out in German, English, Welsh, Turkish, Irish...
    - Counterexamples:
      - Overspecified, fully voiced lenis stops: Swedish (Ringen & Helgason 2004; Helgason & Ringen 2008; Beckman et al. 2011), possibly Île de Groix Breton (Ternes 1970)
      - Lenis stops with categorical short-lag VOT and no passive voicing: Icelandic, Scottish Gaelic
      - Confer also categorical voicing in German fricatives (Beckman et al. 2009)
    - On the other hand, these overspecified categories tend to be relatively inert phonologically (cf. Ringen & Helgason 2004)

Problems with phonetic essentialism II

- Passive voicing isn’t
  - Westbury (1983); Westbury & Keating (1986): English speakers do expand the supraglottal cavity for lenis stops, it just happens to be insufficient to sustain voicing
  - Kingston & Diehl (1994, 1995); Kingston et al. (2008): “lenis/voiced obstruents” are a category that English speakers cue, even if there is no consistent closure voicing

Substance-free to the rescue

- The present approach resolves both issues
  - “Lenis” obstruents in H languages are contrastively specified for C-lar, not underspecified because of lack of contrast
  - Overspecification is expected
    - Substance-free: the realization is language-specific
      - Prevoicing as in Swedish
      - Devoicing as in Icelandic
      - Multiple cues as in English (German? Welsh?)
  - Also explains why English voicing is not entirely passive
  - Still compatible with English being a H language, pace Kingston et al. (2009)

Conclusions: Breton

- Bothoa Breton is best treated as a language where voiceless obstruents are more marked than voiced ones
- Despite its Romance-like phonetics
- There is a ternary contrast on the surface, with delaryngealized obstruents in weak (neutralization-inducing) positions
- Privative features and feature geometry reflect markedness relationships better than binary features
Conclusions: laryngeal realism

- Substance-free laryngeal realism ("laryngeal relativism"; Cyran 2011)
- Languages can be H or L irrespective of their phonetics
- Surface underspecification is less widespread than often suggested
- Surface underspecification expected only in contrast-neutralization conditions, rarely across the board
- Does not invalidate the main insight

Trugarez!

Things to ask

Is there real data?
- Sorry, not yet. Treat this as a falsifiable prediction.

Ask me about...
- Prefixes (see bonus slides)
- Richness of the Base: what happens to delaryngealized obstruents in the input
- Surface underspecification and pre-sonorant voicing: a rôle for categorical distributions

Bonus: prefixes I

- Two productive prefixes: /had/ ‘re-’ and /diz/ ‘not’
- Behave like pwords in many respects
  - Consistently stressed
  - Final consonants behave like word-final ones
- /had/ is easy
  (14)  a. [ˈdesko] ‘learn’
  b. [ˈhaˈdˑesko] ‘relearn’
- Secondary stress on light syllable (otherwise rare)
- No devoicing (contra Hemon 1940; Press 1986)

It’s just a pword

Bonus: prefixes II

- /diz/ is harder
  (15)  a. (i) [ˈalve] ‘key’
  (ii) [ˈdiˈzalve] ‘opening’
  b. (i) [ˈpako] ‘pack’
  (ii) [ˈdiˈsˌpako] ‘unpack’
  c. (i) [ˈbaːdio] ‘baptize’
  (ii) [ˈdiˈzˈvaːdio] ‘rename’
- Seems to be /diz/
- Causes lenition (/b/ → [v])
- This means we could have expected *[dizbako], but obstruent clusters are expected to be voiceless...
- Why not *[ˌdiˈsˌfaːdio] then?
Implied section: suffixes III

I suggest it is /diz + {C-lar}/

In [ˌdiˈzalve], C-lar docking is vacuous

In [ˌdisˈpako], devoicing is entirely parallel to devoicing sandhi (recall prefixes are also pword-like domains)

diz → s

<table>
<thead>
<tr>
<th>C-pl</th>
<th>C-lar</th>
<th>C-lar</th>
<th>C-pl</th>
<th>C-man</th>
</tr>
</thead>
<tbody>
<tr>
<td>[cor]</td>
<td>[vcl]</td>
<td>[lab]</td>
<td>[cl]</td>
<td></td>
</tr>
</tbody>
</table>

References I


Bonus: prefixes IV

There are two explananda with [.dizˈvaːdio]

Lack of cluster devoicing: spread of C-lar blocked across a word boundary, no incentive to epenthesize [vcl]

Lack of coda delaryngealization: floating C-lar provides the feature

diz → vaːdio

<table>
<thead>
<tr>
<th>C-pl</th>
<th>C-lar</th>
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References II


References III


References IV


References V


References VI


