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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

Background
Laryngeal realism and phonetic essentialism

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
- Jansen (2004) for West Flemish
- Colina (2009) for Ecuadorian Spanish
- Cyran (2011) for Kraków/Poznań Polish
- Solves the phonological problems very nicely
- But is PSV phonological?

Phonological problems with PSV

- Especially acute in a contrast-based framework
- If PSV is treated as a phonological spreading process...
  - ...where do the vowels and sonorants get redundant voicing specifications?
    - They are voiced because there is full specification
    - They receive redundant [+voice] postlexically
  - ...why does PSV sometimes do strange things?
    - In some Breton dialects (e.g. Jackson 1960), PSV in stops parallels [x] [h]
    - In some Dutch dialects PSV creates [ɡ], which is otherwise marginal at best

- Strycharczuk (2010): Poznań Polish PSV not neutralizing → no evidence for the H/L question
- Strycharczuk & Simon (forthcoming): West Flemish PSV not assimilatory, involves categoricity (optional choice between categorical variants), inconsistent with the surface-underspecification analysis
- Are we entitled to use PSV evidence for phonological representations?
- Not unless there is other robust phonological evidence
- Which is why I’m here today
The proposal I

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

- Voiceless obstruents
- Voiced obstruents
- Delaryngealized obstruents

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

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-labial</th>
<th>Palatal</th>
<th>Dorsal</th>
<th>Glottal</th>
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<tr>
<td>Stops</td>
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Actually, can be either, depending on context:

- [h] or [h] word-initially, before a (voiceless) consonant, word-medially after [l r]
- [x] utterance-finally or word-finally
- [h] or [j] in voiced contexts

Phonologically, it is clearly voiceless.

Word-level phonology

I give suffixed forms to avoid final devoicing.

Assimilation:

1. a. (i) [ɛs'kɔbjən] 'bishops'
   (ii) [ɛsˈkɔpti] 'diocese'
   (iii) ['tomdər] 'heat'
   (iv) ['zɛhɔr] '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...

![Diagram showing the geometry of a word in Bothoa Breton]

Complications

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

(2) a. (i) [änweːzo] ‘to offend’
   (ii) [änwestɔr] ‘humiliation’

   b. (i) [ˈkaːzəz̥] ‘cat’
   (ii) [ˈbjan] ‘small’
   (iii) [ˈkas̥pjjan] ‘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) [fæbl̩iːʒən] ‘weakness’
   (ii) [fæːb] ‘weak’
   (iii) [fep̩h] ‘weaker’

   b. (i) [ˈkaːzəz̥] ‘cat’
   (ii) [ˈkas̥ad̥] ‘to be on heat (of cats)’
Analysis

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

Evidence for the activity of [voiceless]
- Some forms still retain the [h]: ['skɔː] ‘light’, ['skɔː(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

Further evidence for [voiceless]: the proceptive mutation

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

- Vowel and sonorants are prefixed with [h]:

    (4) a. (i) ['kɔː] ‘cat’
        (ii) [o 'kɔː] ‘your (pl.) cat’
    b. (i) ['broːr] ‘brother’
        (ii) [o 'proːr] ‘your (pl.) brother’

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

Pre-sonorant voicing

- Bothoa Breton seems to have it

    (6) a. (i) ['kɔ̃gɔw] ‘roosters’
        (ii) [kɔ̃ iz'maj] ‘Yves-Marie’s rooster’
    b. (i) ['tɔkɔw] ‘hats’
        (ii) [on ,tɔ̃ 'al] ‘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) a. [ˈlɒst] ‘tail’
    b. [ˌlɒzd ˈbɛːr] ‘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) a. [ˈpɔwɔr] ‘poor’
    b. [ˌoːvr: bɔwɔr] ‘a poor country’
- Under the present assumptions, it must be the docking of a floating C-lar node

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) a. [ˈɡãntɛ] ‘with them’
    b. [dɔ ˈɡaːz kãntɛ] ‘to carry with them’
    c. *[dɔ ˈɡaz ɡãntɛ]
- Crucially, the same unexpected voiceless cluster is found in lenition contexts (although it is usually described as a “failure of lenition”)

(10) a. [ˈkoːz̥] ‘old’
    b. [o ˌɡaːdər ˈɡoːz̥] ‘an old chair’
    c. [on ˌiːli ˈɡoːz̥] ‘an old church’
    d. *[on ˌiːliz ˈɡoːz̥]
Analysis

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

\[
\begin{array}{cccc}
\text{d̥̊g̊as} & \text{kantē} \\
\text{C-pl} & \text{C-lar} & \text{C-lar} & \text{C-man}
\end{array}
\]

\[
\begin{array}{c}
\text{[cor]} \\
\text{[vcl]} \\
\text{[cl]}
\end{array}
\]

No [vcl] spreading across a word boundary

- Familiar analysis...

\[
\begin{array}{cccc}
\text{tud} & \text{t} & \text{(h)om} \\
\text{C-man} & \text{C-pl} & \text{C-lar}
\end{array}
\]

\[
\begin{array}{ccc}
\text{[cl]} & \text{[cor]} & \text{[vcl]}
\end{array}
\]

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

(13) a. \[dɛnː ˈhiːr\] ‘long teeth’
    b. \*[dɛnt ˈhiːr]

\[
\begin{array}{ccc}
\text{C-man} & \text{C-pl} & \text{C-lar}
\end{array}
\]

\[
\begin{array}{c}
\text{[cl]} \\
\text{[cor]} \\
\text{[vcl]}
\end{array}
\]

How is that evidence for underspecification?

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

(11) a. \[ˈdɑːnː\] ‘tooth’
    b. \[ˈdɜnd əl\] ‘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) \[ˈom\] ‘our’
    (ii) \[ˌtu ˈamzər\] ‘all our time’
    (iii) \*[ˌtu ˈamzər]
    b. After nasals
    (i) \[ɡɑnː i ˈhwɛːr\] ‘with his sister’
    (ii) \*[ɡɑnː i ˈhwɛːr]

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) [ˈdiˈzuːlve] ‘opening’
  b. (i) [ˈpako] ‘pack’
        (ii) [ˈdiˈspako] ‘unpack’
  c. (i) [ˈbaːdio] ‘baptize’
        (ii) [ˈdiʒˈvaːdio] ‘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 *[ˌdiːsˈfaːdio] then?
Bonuses: prefixes 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)

```
\[ \text{diz} \rightarrow \text{s} \quad \text{[pako]} \]
\[ \text{C-pl} \quad \text{C-lar} \quad \text{C-lar} \quad \text{C-pl} \quad \text{C-man} \]
\[ \text{[cor]} \quad \text{[vcl]} \quad \text{[lab]} \quad \text{[cl]} \]
```

Bonuses: prefixes IV

- There are two explananda with [,diz′va:dio]
- 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

```
\[ \text{diz} \quad \text{va:dio} \]
\[ \text{C-pl} \quad \text{C-lar} \quad \text{C-lar} \quad \text{C-lar} \quad \text{C-pl} \]
\[ \text{[cor]} \quad \text{[lab]} \]
```

References I


References II


References III


References IV


References V


References VI


