The phonological endgame

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The phonological endgame: Welsh svarabhakti revisited

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Plan

• Discuss the facts of svarabhakti in South Welsh: epenthesis and deletion
• Provide a phonological analysis of epenthesis
• Show that deletion cannot be derived if the analysis of epenthesis is correct
• Argue that deletion is not phonological but allomorphic
• Reconcile the proposal with approaches to the ‘duplication problem’

1 Svarabhakti in Welsh

1.1 The basic facts

Svarabhakti in Welsh

• Pembrokeshire Welsh (Awbery 1986)
• Welsh tends to disallow word-final rising-sonority sequences

(i) a. *[tɛstr]
   b. [tɛster]
   c. [tɛstɾ]
   llestr
   llestri
   'dish'
   'dishes'

• Although consonant clusters as such are OK

(ii) [ˈfɛːnest] ffnestr
    ii) [fɛːnestri] ffnestri
    iii) *[fɛːnesti]
    [ˈfeːnest] ffenestr
    [ˈfeːnestri] ffenestri
    [feˈnestri] ffenestri
    [feˈnestri] ffenestri
    'window'
    'windows'

• Epenthesis (or rather copying), not deletion:

   (3) a. ['muːdul] mwdwl 'haycock'
       b. [muˈduːle] mydylau 'haycocks'

Svarabhakti in Welsh cont’d

• But epenthesis is only deployed if the fully faithful candidate is monosyllabic
• If the form is longer, we get deletion

(4) a. (i) [ˈfeːnest] ffnnest
     (ii) [fɛːnestri] ffnnestri
     (iii) *[fɛːnesti]
     b. (i) [ˈaːndl] anadl
        (ii) [nˈaːdl] anadlu
        (iii) *[nˈaːdl]
        [ˈaːnal] anadl
        [aˈnadli] anadlu
        [aˈnaːli] anadlu
        'breath'
        'breathe'

• Minor facts about (mostly) northern dialects:
  – Some dialects have metathesis: [ˈɛwɜθ] ~ [ɛˈwəθra] ‘uncle’
  – Epenthesis sometimes fails, especially with [vC]

1.2 The conspiracy unmasked

Analysis

• ‘Unity in diversity’ (Hannahs 2009)
• All processes driven by the avoidance of sonority sequencing violations
• The difference between deletion and epenthesis is foot structure
• North Welsh: [ˈpobol] ‘people’ (pobl), [ˈposib] ‘possible’ (posib)
• Both forms satisfy FrBin
  – [(posib)Fr] defeats *[po]Fr(sibil)Fr on foot structure
  – *[poːb]Fr and [pobol]Fr tie on foot structure and Dep, [poːb] loses on Max

Trouble in South Wales

• This analysis is not applicable to South Welsh
• North Welsh disallows long vowels except in final syllables
• South Welsh positively requires them in some contexts in penultima
• Epenthesis does not help with FrBin, because FrBin must be satisfied in the penult
Arguably, the same is true of [fe(ˈneμsμ)ter].

1.3 The analysis of epenthesis

Possible motivations for epenthesis

• Why is [puːd]r better than [puːd]?
• Two possible answers: epenthesis is better than deletion (Max ≫ Dep)...
• ... or we need the right prosodic structure (HL uneven trochee or extrametricality, cf. Ní Chiosáin 1999)
• It is the former

| /pudr/ a. [(ˈpudr)] | *! | * | *
| b. [(ˈpuːd)] | *! | * | *
| c. [ˈ(foː)rð] | *! | * | *
| d. [(ˈforð)] | *! | * | *
| e. [(ˈfoː)roð] | * | * | *

The solution

• Multiple correspondence
• Similar to ‘existential faithfulness’ (Struijke 2000): Max requires that an input have some output, not that it have one output
• Epenthesis violates not Dep but Integrity

<table>
<thead>
<tr>
<th>/soʊuᵰdl/</th>
<th>SonSeq</th>
<th>Dep</th>
<th>Linearity</th>
<th>Integrity</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. [soʊuᵰdl]</td>
<td>*!</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>b. [soʊuᵰdl]</td>
<td>*!</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>c. [ˈsoʊ₁uᵰ₂dl₁]</td>
<td>(d, u)</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>d. [ˈsoʊ₁uᵰ₂d₀₁]</td>
<td>(d, o)</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
</tbody>
</table>

Why is this a good thing?

• Explains the excessive copying:
  • Why not copy/spread just one feature?
  • Why not just insert some default?
  • No hoops to jump explaining why there is no other harmony process
• Allows incomplete copy under duress from other constraints: no sour grapes (Padgett 2002)
• Never mind the features for now: see Iosad (submitted)
• I assume [i] is {V -pl[cor]}, [ə] is {V -pl[cor], V -man[cl]}
• Basically, [ə] is disallowed in final syllables: so [ˈɬəvir] ‘book’ from /ɬəvr/
• This approach chooses the right candidate
2. The problem of deletion

2.1 Why deletion is not phonology

Extending the analysis

- So far we have been assuming that epenthesis is a phonological process repairing SonSeq violations.
- We will have the opportunity to revisit this.
- What about deletion? Is there a phonological conspiracy?

\[
\begin{array}{|c|c|c|c|}
\hline
\text{morph} & \text{SonSeq} & \text{Max(Seg)} & \text{Dep(Seg)} & \text{σ-XM} \\
\hline
\text{a. } [(\text{'feː})nestr]} & *! & & & \\
\text{b. } [(\text{'feː})nest]} & & *! & & \\
\text{c. } [(\text{'feː}nes)ter]} & & & * & \\
\hline
\end{array}
\]

Resolving the conundrum

- Our ranking will always prefer epenthesis over deletion, since we cannot use FtBin to that effect.
- I suggest that the solution is to view the 'deletion' as allomorphy, or more specifically phonologically conditioned stem allomorphy (Bermúdez-Otero 2006, forthcoming; also Anderson 2008, forthcoming).
- The choice is between /fenestr/ and /fenest/ as underlying forms, which means faithfulness does not have anything to say about deletion.

Resolving the conundrum in OT

- Faithfulness is irrelevant: a possible approach

\[
\begin{array}{|c|c|c|c|}
\hline
\text{morph} & \text{SonSeq} & \text{Max} & \text{Dep} \\
\hline
\text{a. } [(\text{'feː})nestr]} & *! & & & \\
\text{b. } [(\text{'feː})nest]} & & *! & & \\
\text{c. } [(\text{'feː}nes)ter]} & & & * & \\
\hline
\end{array}
\]

- Problem: these constraints as such cannot distinguish between [fɛˈnestri] and *[fɛˈnesti]
- If anything, *[fɛˈnesti] saves a complex onset.

2.2 The advantages of allomorphy

Why allomorphy?

- But now we have no conspiracy: SonSeq does not play a role in selecting [ˈfeːnest] over [ˈfeːnestr]
- So how is this good?
- Epenthesis may also be allomorphic
- Deletion is lexically specific
- Deletion can show cyclic misapplication within morphosyntactic classes

Lexically specific epenthesis

- Pembroke Welsh also shows epenthesis that is not apparently driven by SonSeq

\[
\begin{array}{|c|c|c|c|}
\hline
\text{SonSeq} & \text{Max} & \text{Dep} \\
\hline
\text{a. } [(\text{'heː})lem]} & & & \\
\text{b. } [(\text{'heː})mi]} & & & \\
\text{c. } [(\text{'guː})d]} & & & \\
\hline
\end{array}
\]

- Problem: these constraints as such cannot distinguish between [fɛˈnestri] and *[fɛˈnesti]
- If anything, *[fɛˈnesti] saves a complex onset.

Types of phonological conditioning

- When we say 'phonologically conditioned', we could mean:
  - Output-oriented optimization (e.g. Lapointe 2001; Wolf 2008; Anderson 2008)
  - Input-driven subcategorization (e.g. Paster 2006; Bye 2007; Yu 2007)
- We probably need both (Nevins 2011)
- With Welsh, input subcategorization seems more promising, at least in terms of descriptive adequacy

\[
\text{window } \Rightarrow \left\{ \begin{array}{l}
\text{/fenestr/} \\
\text{/fenest/}
\end{array} \right\}
\]

6
Unpredictable deletion

- There does not appear to be clear phonological rationale to what deletes: [ˈfeːnestɾ] ‘window’ but [ˈaːnadɬ] ‘breath’;
- Hannahs (2009), following much of the literature, claims deletion of the sonorant (except [dl]) and introduces a constraint ConModMaxIO (bans deletion that leads to contiguity violations)

\*\* But what do we do with [dl] after all? \*\*
- It’s not just [dl]: also [dn], [rn] (Russell 1984; P. W. Thomas 1995; Wmffre 2003)
- This is all completely unproblematic under the allomorphy account

Overapplication

- Going back to the issue of *[feˈnesti]…
- Deletion can actually show cyclic misapplication (P. W. Thomas 1995; Wmffre 2003)
- But appears to stay inside the boundaries of morphological categories

\(a\)

1. [ˈaːnadɬ] anadɬ ‘breath’
2. [aˈnaːle] anadɬau ‘breaths’
3. *[aˈnaːli]

□ Makes sense if the selection happens at the stem level
□ Parallel in Spanish (Bermúdez-Otero, forthcoming): contar ~ cuenta but cuento ~ cuentista

The advantages of lexical insertion

- In the stem-centric model of Bermúdez-Otero (2012, forthcoming), generalizations about stem allomorphs are Jackendovian lexical redundancy rules

\*\* Principled coupling of the stem-level syndrome (Kaisse and McMahon 2011), including cyclic misapplication, with phonological irregularity
- ‘Deletion’ is the debris of formerly productive phonology (Kiparsky 1995; Bermúdez-Otero 2007)
- Changes in terms of deletion behaviour are changes in underlying representation
- Some confirmation
  - Some deletion does become lexically stable, e. g. [hilo] for hiddle ‘to sieve’ (Iwan Wmffre p. c.)
  - These changes clearly proceed by lexical diffusion (Wmffre 2003)

A note on diachrony

- If this story is true, we should be seeing these diffusing changes in the diachrony
- Also: Schumacher (2011) claims that epenthesis in [hv], [rv], [wv] was regular in Middle Welsh
- Indeed we find [ˈguːðuɡ], but also [ˈfirv], [ˈpalv] (MW furyf, palyf)
- Should be testable on the corpora
- Next step

Summary

- There is no phonological conspiracy against rising-sonority sequences in (South) Welsh
- If epenthesis is phonology, deletion is not
- Stratal solution with stem allomorphy appears to create the duplication problem
- Advantages over a ‘(parallel) phonology at all costs’ approach
- Duplication arises via diachrony and is not a ‘problem’ for synchronic analysis
- Whole-language analysis is important

Diolch yn fawr!

References

---. forthcoming. The Spanish lexicon stores stems with stem vowels, not roots with inflectional class features. Probus 23 (5).


