THE UNIVERSITY of EDINBURGH

Edinburgh Research Explorer

Non-contrastive epenthetic segments as surface prosodic structure

Citation for published version:
Iosad, P 2013, 'Non-contrastive epenthetic segments as surface prosodic structure' Paper presented at 21st Manchester Phonology Meeting, Manchester, United Kingdom, 23/05/13 - 25/05/13, .

Link:
Link to publication record in Edinburgh Research Explorer

Document Version:
Author final version (often known as postprint)

OPEN ACCESS

Non-contrastive epenthetic segments as surface prosodic structure

Pavel Iosad
University of Ulster
`p.iosad@ulster.ac.uk`

21st Manchester Phonology Meeting University of Manchester 23rd May 2013

1 Segment epenthesis or prosodic features?

1.1 Epenthesis of predictable segments

Prosodically driven epenthesis

- In this talk I focus on various types of top-down epenthesis

    - Repair of dispreferred structures (onsetless syllables, hiatus)

    - Augmentation in designated positions, including 'stress-to-weight'

    - Prosody with a morphological source (e. g. Köhnlein 2011; Zimmermann and Trommer 2013)

- Frequent approach: epenthesis of 'the least marked segment', although see de Lacy (2006) for a more nuanced discussion

- Typologically frequent epenthetic consonants are [ʔ], [h], [t]

- German *([ʔ])*Amt*

- What's the problem?

A contrastivist problem

- Predictable segments are by definition not contrastive

- Since at least Trubetzkoy (1939) it has been assumed that [ʔ] is not part of the consonant inventory of German, precisely because its distribution is predictable

- But prosodically driven epenthesis (and perforce morphological epenthesis) must involve something phonological

- Problem for the contrastivist hypothesis (Dresher, Piggott, and Rice 1994; Dresher 2009; Hall 2007)?

- Could be construed as a Halle (1959)-like argument: focus on contrastive status obscuring phonological patterns

Some possible solutions

- Here are some potential answers

    1. Reconsider the phonological status of the phenomenon
    2. Reconsider the segmenthood of whatever is epenthesized
    3. Revise the contrastivist hypothesis to focus on features rather than inventories of 'segments'

- All three are probably valid for different cases

- In this talk, I focus on (2) with a dash of (3)

☞ For more of (3), see also e.g. Kim (2013)

1.2 Glottal stop insertion in Scottish Gaelic

The proposal

- In at least some languages, 'epenthetic glottal stops' are instances of a laryngeal feature associated directly to a (possibly segmentally empty) prosodic node

☞ In both of my cases, it is the mora, but I do not suggest this must be specific either to morae or to laryngeal features

- Cf. Kehrein and Golston (2004)

- Simple example: southern dialects of Scottish Gaelic

- See Holmer (1938); Ternes (1980); Jones (2000, 2006) for data, Smith (1999); Ternes (2006); Iosad (2013) for analysis

Gaelic glottal stops: static evidence

- The glottal stop is not a phoneme of Scottish Gaelic in the classic sense (e. g. Lamb 2001), though Bosch (2010) is more cautious

- However, it is used to provide a second mora in a stressed syllable (stress-to-weight; Smith 1999)

(1)　　a.　　Heavy monosyllables
　　　　　　(i)　　['tʰrɑ$_\mu$i$_\mu$]　　　　*tràigh*　　　'shore'
　　　　　　(ii)　　['kʰlʲu:$_{\mu\mu}$]　　　*cliù*　　　'fame'
　　　　b.　　Subminimal monosyllables
　　　　　　(i)　　['tʰʲe$_\mu$ʔ$_\mu$]　　　*teth*　　　'hot'
　　　　　　(ii)　　['mɛ$_\mu$ʔ$_\mu$]　　　*math*　　　'good'

Gaelic glottal stops: alternation evidence

- Evidence from alternations in affixation:

(2)　　a.　　Open light syllables, epenthesis ensues
　　　　　　(i)　　['kʰu$_\mu$ʔ$_\mu$.riç mi]　　*cuiridh mi*　　'I will put'
　　　　　　(ii)　　['xu$_\mu$ʔ$_\mu$.rə tu]　　*chuireadh thu*　'you would put'
　　　　b.　　Weight-by-position obviates the need for epenthesis
　　　　　　(i)　　['xu$_\mu$r$_\mu$ mi]　　　*chuir mi*　　'I put (past)'
　　　　　　(ii)　　['xu$_\mu$r$_\mu$ u]　　　*chuir thu*　　'you put (past)'

- Potential objection: can't the glottal stop come with the morphemes?

- This also requires that [ʔ] be a segment in the lexicon
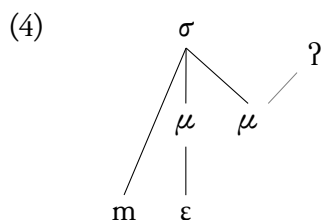
Gaelic glottal stops: postlexical phonology

- Glottal stop insertion must be postlexical; data from Jones (2000, 2006)

- Epenthesis fed by postlexical resyllabification

(3)　　a.　　[ɣɛʔ.n ɑ]　　　　*dh'fhan e*　　'he stayed'
　　　　b.　　[stɑʔ.t ən kʰɑːr]　*stad an càr*　'stop the car'
　　　　c.　　[koʔ.p ənʲ ɛːn]　　*gob an eun*　'the bird's beak'

- This must be phrase-level phonology

The proposal

- Proposed representation for [mɛʔ] 'good':

(4)

- There is no segment: no root node, just the feature and the prosodic constituents

- The feature is more like a tone than a segmental feature

- The 'segmental inventory' does not come into play

Discussion

- Isn't it just tonal?

    – Could be. Written as a stop but is often realized as creaky phonation (Roibeard Ó Maolalaigh p. c.)

    – In all probability developed from a falling tone diachronically (cf. the proposal for Danish *stød* by Riad 2000)

    – Rapid pitch fall occasionally recorded in relevant contexts in Ó Dochartaigh (1994–1997)

    ☞ In a substance-free view of the world, 'tonal' vs. 'non-tonal' is probably not a valid distinction anyway

- How do we decide between this representation and one with a glottal stop?

    – In Scottish Gaelic, they seem empirically indistinguishable

- Jones (2006) discusses some data that seem to show lexicalization of [ʔ], which eliminates the original conundrum

2   Short vowel *stød* in Zealand Danish

## 2.1   Empty and filled morae

A potential contrast

- The analysis of Scottish Gaelic requires the confluence of two representational possibilities

    – A mora not dominating a root node

- ☞ Not necessarily very new, cf. empty nuclei
  - – Association of features to suprasegmental nodes
  - ☞ Tones, also laryngeal features à la Kehrein (2002); Kehrein and Golston (2004)
- A prediction: if both empty and filled morae are representationally possible, it should be possible for a language to contrast them
- Proposal: some Danish dialects do just that

The contrast

- Standard Danish *stød* requires a '*stød* basis': long vowel or voiced coda, i. e. a bimoraic syllable with sonority-sensitive weight-by-position (e. g. Grønnum and Basbøll 2001; Basbøll 2005)

(5)   Standard Danish *stød*: [preːˀtː] 'width' (*bredde*)
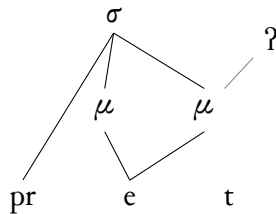
- Some Danish dialects on Zealand/Sjælland and Funen/Fyn contrast 'short vowel *stød*' and 'standard Danish *stød*'
- Data from Zealand (Ejskjær 1965, 1967, 1970)
- The 'short vowel *stød*', as the name suggests, is found in syllables with a short vowel, irrespective of what follows

(6)   Short vowel *stød*: [kʰleˀpʌ] 'cut (pres.)' (*klipper*)
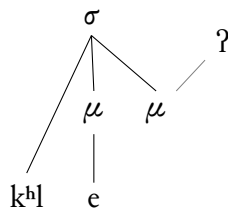
2.2   Accounting for short vowel *stød*

Conditions for short vowel *stød*

- Only appears in disyllabic forms

☞ For some value of 'disyllabic' to be discussed later

- Sometimes appears lexically distributed

- But obligatory in certain contexts

A note on disyllabicity

- The relevant Zealand Danish varieties show apocope of final [ə], but preserve the contrast between CVC and CVCə words by other means (Ejskjær 1970)

  – Historical CVCə words show later tonal peaks (»jævnere og senere rejsning«)
  – Historical CVCə words show longer duration of C_2
  – In certain conditions there is devoicing of final sonorants in CVC but not in CVCə

- Ejskjær (1970) compares this to East Funen (Andersen 1958), where apocope in CVCə is optional

- I will assume these are disyllabic with an empty nucleus projecting the prosodic structure for the the H tone (cf. Köhnlein 2011): [preːˀ.t_] 'width' (*bredde*)

The distribution of *stød*

- In some contexts, short-vowel *stød* appears unpredictable and thus lexically determined

(7) a. Examples with *stød*
    (i) [ˈkʰɪˀtəl] *kittel* 'gown'
    (ii) [ˈprøˀkʌ] *brygger* 'to brew (pres.)'
  b. Examples without *stød*
    (i) [ˈtʰæskəl] *tærskel* 'threshold'
    (ii) [ˈtʰɑpʌ] *taber* 'to lose (pres.)'

☞ Incidentally, if this is lexical storage, the contrastivist hypothesis is upheld for whatever this feature is

Stød as sonority-related repair

- One regularity in the appearance of short-vowel *stød* is seen in suffixation

- Monosyllables with short vowels + [p t k s f] or clusters of these never bear *stød*

- Cf. the fact that such sequences are also not sonorous enough for the common Danish '*stød* basis'

- But in the definite singular short-vowel *stød* is regular in these forms:

(8) a. (i) [ˈtʰɪp] *tip* 'tip'
      (ii) [ˈtʰɪˀpɪn] *tippen* 'the tip'
  b. (i) [ˈløst] *lyst* 'desire'
      (ii) [ˈløˀstən] *lysten* 'the desire'

The source of *stød*

- Suggestion: *stød* licenses an empty mora inserted for a prosodic reason

- The definite article is known to show clitic-like behaviour

☞ E. g. it does not influence common Danish *stød* or Swedish and Norwegian pitch accents

- The adjunction of the clitic builds a recursive prosodic word, which is subject to a head-dependent asymmetry requirement (e. g. Dresher and van der Hulst 1998)

The structure

(9)
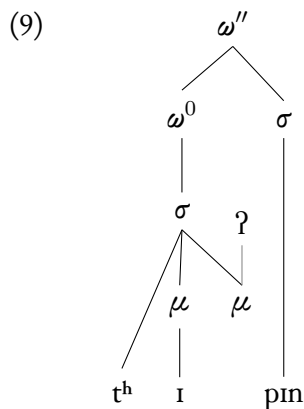
- The relevant consonants cannot project a mora since they are not sonorous enough

Top-down prosodic conditioning of *stød*

- The crucial point here is that the appearance of *stød* is parasitic on the addition of a mora, which is in turn driven by considerations of prosodic asymmetry

- Further support for the importance of prosodic asymmetry

    – *Stød* is obligatory in words with an unstressed prefix: [beˈsluˀtə] 'to decide', [faˈɑˀktə] 'to despise'

    ☞ But not obligatory in underived forms with similar prosody: [kaˈrafəl] 'jug', [aˈdræsː] 'address'

    – *Stød* is obligatory for disyllabic elements with the right segmental structure in the second position in words with multiple stresses: [ˈapˌfreˀskː] 'to freshen up', [ˈsøltˌbœˀtː] 'salt bucket'

Short-vowel *stød* and common Danish *stød*: summary

- The 'basis' for common Danish *stød* is a bimoraic syllable with a second mora projected by a segment with relatively high sonority

- The 'basis' for short-vowel *stød* is a syllable that needs a second mora but lacks the sonorous segmental material to project it

- Hence, the phonology forces the insertion of a second mora but does not associate it with a root node

- But there is a feature associated *directly* to that empty mora

- The same feature associates to a mora projected by a segment in common Danish *stød*

- The clear connection with prosody, mediated by sonority, makes a segmental account along Scottish Gaelic lines much less attractive

3   Discussion

3.1   Consequences for contrastivism

A contrastivist conundrum

- The Contrastivist Hypothesis as often stated relies on 'the inventory'

- If 'segments' are defined as 'whatever is dominated by a root node', the prosodic features described above are irrelevant for the CH

- But they seem to be manipulated by the phonology

- Is there a principled distinction between features that attach to root nodes and those that attach to other prosodic constituents?

- I suggest there isn't

Focus on features

- However, if the Contrastivist Hypothesis is reformulated to refer to *features stored in the lexicon*, the problem disappears

- There is still a prediction that the features manipulated by the phonology must be those found in the lexicon

☞ Borne out in both Scottish Gaelic and Danish

- This view of the CH is also reconcilable with the existence of predictably distributed segments composed of contrastive features (Moulton 2003; Kim 2013)

8

3.2 Storing prosodic structure

The consequences for storage

- In both Scottish Gaelic and Zealand Danish the 'epenthetic' glottal stops (*stød*) can be stored in the lexicon

☞ Indeed it appears that in Danish this is *necessary*

- What is it that the lexicon stores here?

    - Not the feature itself: it does not have a host segment (root node)
    - Could be the mora, but how to make sure it does not just dock to the second syllable?
    - It seems that the mora must be stored together with the syllable it is affiliated to

Stored syllabic structure?

- It has been argued that syllable structure is never contrastive

- E. g. McCarthy (2007) suggests syllabification does not introduce a LUM

- Others disagree, e. g. Vaux (2003)

☞ See Iosad (2013) for arguments that syllabic structure must be stored in Scottish Gaelic

- The general apprehensiveness about storing syllabic structure seems misplaced

    - Stored moraic structure is OK (cf. 'distinctive weight'; Morén 2001)
    - Stored foot structure is OK (lexical stress)
    - So why not syllables?

3.3 Summary

Summary

- Some predictable epenthetic segments may not be segments but rather features attached to prosodic nodes

- Such features may attach both to lexically stored prosodic structure (including syllabic structure) and to structure built by the phonological grammar

- As long as the prosodic structure and the features attached to it are stored in the lexicon, their availability in the phonology does not violate the Contrastivist Hypothesis

- The Contrastivist Hypothesis should be formulated solely with reference to lexically stored features, rather than features used to distinguish lexically stored segments

References

Andersen, Poul. 1958. *Fonemsystemet i østfynsk. På grundlag af dialekten i Revninge sogn.* Udvalg for folkemaals publikationer. Serie A 14. København: J. H. Schultz forlag.

Basbøll, Hans. 2005. *The phonology of Danish.* Oxford: Oxford University Press.

Bosch, Anna R. K. 2010. 'Phonology in Modern Gaelic.' In *The Edinburgh companion to the Gaelic language,* edited by Moray Watson and Michelle Macleod, 262–282. Edinburgh: Edinburgh University Press.

De Lacy, Paul. 2006. *Markedness: reduction and preservation in phonology.* Cambridge: Cambridge University Press.

Dresher, B. Elan. 2009. *The contrastive hierarchy in phonology.* Cambridge: Cambridge University Press.

Dresher, B. Elan, Glyne Piggott, and Keren Rice. 1994. 'Contrast in phonology: overview.' *Toronto Working Papers in Linguistics* 14:iii–xvii.

Dresher, Elan, and Harry van der Hulst. 1998. 'Head-dependent asymmetries in prosodic phonology: visibility and complexity.' *Phonology* 15 (3): 317–352.

Ejskjær, Inger. 1965. 'Stød i andet sammensætningsled i typen fortis-semifortis i danske ømål.' *Acta Philologica Scandinavica* 27 (1–2): 19–67.

———. 1967. *Kortvokalstødet i sjællandsk.* Udvalg for folkemaals publikationer. Serie A 22. København: Akademisk forlag.

———. 1970. *Fonemsystemet i østsjællandsk. På grundlag af dialekten i Strøby sogn.* Udvalg for folkemaals publikationer. Serie A 24. København: Akademisk forlag.

Grønnum, Nina, and Hans Basbøll. 2001. 'Consonant Length, Stød and Morae in Standard Danish.' *Phonetica* 58 (4): 230–253.

Hall, Daniel Currie. 2007. 'The role and representation of contrast in phonological theory.' PhD diss., University of Toronto.

Halle, Morris. 1959. *The sound pattern of Russian: a linguistic and acoustical investigation.* 's Gravenhage: Mouton.

Holmer, Nils M. 1938. *Studies on Argyllshire Gaelic.* Skrifter utgivna av Kungliga Humanistiska Vetenskapssamfundet i Uppsala 31. Uppsala: Almqvist & Wiksell.

Iosad, Pavel. 2013. 'Glottal stop insertion in Scottish Gaelic and contrastive syllabification.' Presentation at Teangeolaíocht na Gaeilge / Cànanachas na Gàidhlig / The Linguistics of the Gaelic Languages XV, University College Dublin. `http://goo.gl/Wffa2`.

Jones, George. 2000. 'Beagan mu'n stad ghlotasach ann an Gàidhlig Ceann a Deas Earraghaidheil.' *Scottish Gaelic Studies* 20:201–211.

———. 2006. 'Cunntas air an stad ghlotasach ann an Gàidhlig Ceann a Deas Earra Ghàidheal.' In *Cànan & Cultar / Language & Culture: Rannsachadh na Gàidhlig 3,* edited by Wilson McLeod, James E. Fraser, and Anja Gunderloch, 193–202. Edinburgh: Dunedin Academic Press.

Kehrein, Wolfgang. 2002. *Phonological Representation and Phonetic Phasing.* Tübingen: Max Niemeyer Verlag.

Kehrein, Wolfgang, and Chris Golston. 2004. 'A prosodic theory of laryngeal contrasts.' *Phonology* 21 (3): 325–357.

Kim, Yuni. 2013. *Marginal contrast, categorical allophony and the Contrastivist Hypothesis.* Presentation at GLOW 36, Lund University.

Köhnlein, Björn. 2011. 'Rule reversal revisited: synchrony and diachrony of tone and prosodic structure in the Franconian dialect of Arzbach.' PhD diss., Leiden University.

Lamb, William. 2001. *Scottish Gaelic.* Languages of the World/Materials 401. München: LINCOM Europa.

McCarthy, John J. 2007. *Hidden generalizations: phonological opacity in Optimality Theory.* Advances in Optimality Theory 1. Equinox.

Morén, Bruce. 2001. *Distinctiveness, coercion, and sonority: a unified theory of weight.* London, New York: Routledge.

Moulton, Keir. 2003. 'Deep allophones in the Old English laryngeal system.' *Toronto Working Papers in Linguistics* 20:157–173.

Ó Dochartaigh, Cathair, ed. 1994–1997. *Survey of the Gaelic dialects of Scotland.* Dublin: Dublin Institute for Advanced Studies.

Riad, Tomas. 2000. 'The origin of Danish *stød*.' In *Analogy, leveling, markedness,* edited by Aditi Lahiri, 261–300. Berlin, New York: Mouton de Gruyter.

Smith, Norval. 1999. 'A preliminary account of some aspects of Leurbost Gaelic syllable structure.' In *The syllable: views and facts,* edited by Harry van der Hulst and Nancy Ritter, 577–630. Studies in Generative Grammar 45. Berlin: Mouton de Gruyter.

Ternes, Elmar. 1980. 'Scottish Gaelic phonemics viewed in a typological perspective.' *Lingua* 52 (1–2): 73–88.

———. 2006. *The phonemic analysis of Scottish Gaelic, based on the dialect of Applecross, Ross-shire.* 3rd revised. Dublin: Dublin Institute for Advanced Studies.

Trubetzkoy, Nikolai S. 1939. *Grundzüge der Phonologie.* Travaux du Cercle linguistique de Prague 7. Prague: Le cercle linguistique de Prague.

Vaux, Bert. 2003. 'Syllabification in Armenian, Universal Grammar and the lexicon.' *Linguistic Inquiry* 34 (1): 91–125.

Zimmermann, Eva, and Jochen Trommer. 2013. 'The linearization of morphological weight.' In *Rule interaction in grammar,* edited by Fabian Heck and Anke Assmann, 123–161. Linguistische Arbeitsberichte 90. Universität Leipzig.