Glottal stop insertion in Scottish Gaelic and contrastive syllabification

Citation for published version:

Link:
Link to publication record in Edinburgh Research Explorer

Document Version:
Peer reviewed version

Publisher Rights Statement:

General rights
Copyright for the publications made accessible via the Edinburgh Research Explorer is retained by the author(s) and / or other copyright owners and it is a condition of accessing these publications that users recognise and abide by the legal requirements associated with these rights.

Take down policy
The University of Edinburgh has made every reasonable effort to ensure that Edinburgh Research Explorer content complies with UK legislation. If you believe that the public display of this file breaches copyright please contact openaccess@ed.ac.uk providing details, and we will remove access to the work immediately and investigate your claim.
Glottal stop insertion in Scottish Gaelic and contrastive syllabification

Pavel Iosad
Ollscoil Uladh
p.iosad@ulster.ac.uk

Teangeolaíocht na Gaeilge XV  An Coláiste Ollscoile, Baile Átha Cliath 19 Aibreán 2013

1 Glottal stops and pitch accents in Scottish Gaelic

1.1 Pitch accents in Hebridean Gaelic

Pitch accents in Hebridean Gaelic

• It is well-known that Hebridean (e.g. Lewis) dialects show a contrast between two types of 'pitch accents'/‘word tones' (Borgstrøm 1940; Oftedal 1956; Ladefoged et al. 1998)

• Long rise (late peak)
  – Historical monosyllables: [ˈpoː] ‘cow’ (OI bó)
  – Including svarabhakti words: [ˈpalˠak] ‘bellows’ (OI bolg)

• Rise-fall (early peak)
  – Historical disyllables: [ˈpalˠax] ‘boy’
  – Including hiatus words: [ˈpoː] ‘underwater rock’ (ON boði)

Pitch accents reflect syllabic structure

• Following Ladefoged et al. (1998); Ladefoged (2003), it is possible to analyse the pitch contours as reflecting syllable counts
  – The pitch contours: if the pitch accent is H*+L, the trailing tone can only appear in disyllables (rise-fall), in monosyllables we only see the H* rise
Pitch accents as synchronic syllable count

- Smith (1999) analyses the svarabhakti vowels in balg and bhalachaibh with complex prosodic machinery (recursive syllables)

\[
\begin{array}{c}
\backslash v \quad \sigma \quad \backslash a \quad \backslash l \quad \sigma \quad \backslash a \quad \sigma \quad \backslash \\end{array}
\]

- But they are basically inert

- Proposal: these vowels are absent from surface phonological representations

Pitch accents as synchronic syllable counts

- Thus, balg is phonologically [palˑk]
  - Explains the tonal contour (Ladefoged et al. 1998)
  - Explains the rhyme palatalization to [pulˑk]
  - Explains the behaviour with respect to syncope

- Some things need ironing out
  - Dialects like Barra (Borgstrøm 1937; Clements 1986) where the svarabhakti vowel is not always an exact copy ([ˈpulˑk] builg)
  - Historical svarabhakti before deleted segments: [ˈfala.i] with ‘monosyllabic’ rising pitch (fälbaidh ‘will go’)

- Still, this analysis makes sense (Oftedal 1956)

1.2 Glottal stops in southern Gaelic

Glottal stops in southern Gaelic

- Much like Danish stød corresponds to Norwegian and Swedish pitch accent, in southern Gaelic the Hebridean pitch accents correspond to glottal stop insertion

- Argyll (Holmer 1938; Jones 2000), Tiree (Ternes 1980), see also Ternes (2006); Eliasson (2000)

• Smith (1999) suggests that the southern glottal stop is due to a stress-to-weight (Prince 1992; Bye and de Lacy 2008) requirement: if a stressed syllable cannot be bimoraic, insert a glottal stop

• Questions
  – Is GSI a live process? Yes
  – Is Smith (1999) correct? Yes

2 Glottal stop insertion as stress-to-weight

2.1 Glottal stop insertion is phonological

Is GSI phonological?

• A lot of the evidence is static

(1) a. No glottal stop insertion in heavy syllables
   (i) [ˈtʰɾɑ̆iμ] tràigb ‘shore’
   (ii) [ˈkʰlu̯iμ] cliù ‘fame’
   (iii) [ˈpʃɨəμ] beò ‘alive’

   b. Glottal stop insertion is subminimal monosyllables
      (i) [ˈtʰe̯ʔ̥] teth ‘hot’
      (ii) [ˈmɛ̯ʔ̥] math ‘good’
      (iii) [ˈkɾu̯ʔ̥] gruth ‘curds’

• Evidence from alternations shows that at least in some cases it is a live phonological process

Inflection

• Adding inflectional suffixes/clitics leads to open/closed syllable alternations

(2) a. Open syllables, glottal stop inserted
   (i) [ˈkʰɾ̥iμɾ̥ɪ̆c mi] cuiridb mi ‘I will put’
   (ii) [ˈxu̯ɾ̥iμɾ̥ʊ tu] chuireadh tu ‘you would put’

   b. Closed syllables, no glottal stop
      (i) [ˈxu̯ɾ̥iμ mi] chuir mi ‘I put (past)’
      (ii) [ˈxu̯ɾ̥iμ u] chuir tu ‘you put (past)’

Syncope

• Noted by Smith (1999)

• Open/closed syllable alternations due to syncope
Phrase-level resyllabification

- Data from Jura (Jones 2000)
- No GSI in closed syllables as expected

\[(\text{3})\]

\[
\begin{array}{lll}
\text{a.} & (i) & \text{[t} \, \text{ɾ \, ð} \, \text{ɾ\text{əs}] } \quad \text{dor} \text{us} \quad \text{‘door’} \\
                 & (ii) & \text{[t} \, \text{ɾ \, ð} \, \text{ɾ\text{ən}] } \quad \text{doir} \text{e} \text{an} \quad \text{‘doors’} \\
\text{b.} & (i) & \text{[p} \, \text{ɾ \, ð} \, \text{ɾ\text{əl}] } \quad \text{ba} \text{il} \quad \text{‘place’} \\
                 & (ii) & \text{[p} \, \text{ɾ \, ð\text{ən}] } \quad \text{bail} \text{e} \text{an} \quad \text{‘places’} \\
\end{array}
\]

\[
\text{2.2 The glottal stop is a moraic coda}
\]

The prosodic affiliation of the glottal stop

- Smith (1999) proposes that glottal stop insertion is triggered by stress-to-weight
- In other words, [ʔ] is a coda
- This is important in cases like [poʔo] bodba: VC.V syllabification?
- Argued to be impossible
- VC.V syllabification can be reported by speakers (Ni Chiosáin, Welby, and Espesser 2012)
- But examples of core phonological phenomena involving it are more difficult to find
- I argue that southern Gaelic is an example

The glottal stop and weight-to-stress

- As Smith (1999) observes, the glottal stop appears in open syllables as discussed above
- Tellingly, it does not appear before svarabhakti vowels: [marəv] ‘dead’, consistent with surface-phonological [marv]
- Jones (2000) provides more evidence for the connection with moraicity
- The rule is that there is no GSI in closed syllable is not ‘fully regular’ (gu léir cunbalach) in Jura
- We do get forms like [fɛʔn] ‘stay’ alongside [fɛn]
The connection with fortis sonorants

- According to Jones (2000), word-final [n l r] in forms like [fɛn] are long
- GSI overapplies in closed syllables only before [n l r]
- Obviously, these are the segments participating in the ‘fortis’ contrast

The GSI overapplication is a type of compensatory lengthening before underlyingly moraic sonorants like lengthening/diphthongization (Ní Chiosáin 1991)

3 Contrastive syllabification in Scottish Gaelic

3.1 Pitch accent and GSI as syllabic structure

Why is this important again?

- If I have convinced you that glottal stop insertion creates moraic codas in light syllables, we are in a position to reconsider [poʔo] ‘underwater rock’
- I suggest that the contrast between something like [poʔo] ‘underwater rock’ (bodba) and [poː] ‘cow’ (bó) is underlyingly one of syllable structure: /po(o)ː/ vs. /poː/
- Syllable structure has been assumed to be completely predictable
- For instance, for McCarthy (2007) syllabification does not introduce a LUM because there are no faithfulness constraints for syllabification

Weight-to-stress or hiatus?

- Returning to [poʔo], how do we know that the glottal stop is not a hiatus-breaker?
- We know that hiatus is repaired by contraction
- Syncope deletes the second syllabic node (even if it stored), triggering contraction

(6) a. (i) ['joʔur] leabbar ‘book’
    (ii) ['jowriçən] leabbraicbean ‘books’

b. (i) ['uʔul] ubbal ‘apple’
    (ii) ['uːlən] ubblan ‘apples’

- No explanation for this interaction if the glottal stop has nothing to do with syllabic structure
3.2 Against empty onsets

Stored syllable structure all around

- Clements (1986); Smith (1999) have proposed to derive unusual syllabification effects in Scottish Gaelic by postulating empty onset consonants
- In /po_o/, the empty onset creates an open syllable
- Conceptually, I can’t see an objection against empty segments
- However, how do we know they are onsets?
- Syllabification is done by the phonology
- Normally, syllabification is driven by sonority (e.g. Zec 1988; Morén 2001; Topintzi 2010)
- But...
  - How sonorous is an empty segment?
  - How do we know that the best prosodification doesn’t involve, say, deletion?
- The whole idea stands and falls on the onset status of the empty consonant
- But that’s essentially storing a syllabic treelet

Wrapping up

- Glottal stop insertion in southern Scottish Gaelic is driven by constraints on syllabic structure
- The existence of unpredictable glottal stops (and Hebridean pitch accents) shows that syllabic structure is not fully predictable
- Best analysis: assume that syllabic structure can also be stored (cf. Vaux 2003)

After all, we can store
  - Foot structure (e.g. lexical stress)
  - Moraic structure (lexical vowel length, lexical geminates)
  - So why not syllabic structure?

Syllables are not special
References


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


