Vowel length in Shetland Norn

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Vowel length in Shetland Norn
Contact, change, and competing systems

Remco Knooihuizen
Rijksuniversiteit Groningen
r.m.knooihuizen@rug.nl

Pavel Iosad
University of Edinburgh
pavel.iosad@ed.ac.uk

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University of Edinburgh
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1 Background

1.1 Shetland: a linguistic history

Population history

- Settlement from Scandinavia from AD 800
  - Part of Norway
  - Some contact with Scotland
- Pawned to the Scottish crown and then incorporated: 1469–1472
  - Increased contact with Scotland
  - Settlement of Scots and intermarriage (Knooihuizen 2008b)
  - Several waves of immigration (16th, 19th, 20th century)

Shetland Norn

- West / Insular North Germanic language
  - Potentially some Celtic influence (Lindqvist 2012)
  - Similar to Faroese in many respects (Barnes 1998)
    * e.g. Verschärfung, diphthongisation of /iː = yː/, loss of /Ø ð/ (?)
  - Many common features with the dialects of western Norway
- Language death around 1750 (but controversial; e.g. Melchers 1981, Knooihuizen 2008a)
- Few direct sources
Vowel length in Shetland Norn

- A few medieval documents (Barnes 1998)
- Dictionary (1890s) (Jakobsen 1908–1921, 1928–1932)

Jakob Jakobsen

- Faroese linguist (1864–1918) (see Barnes 1996, Dahl 2010)
  - Trained in tradition of Sweet and Jespersen
  - Active in Faroese linguistic revival
  - Phonetic transcriptions, (failed) spelling reform
- Fieldwork in Shetland, 1893
  - Ph.D., Det norrøne sprog på Shetland (1897)
  - Etymological Dictionary, finished posthumously
    * ‘Phonetics run riot’ (Stewart 1964)
    * But analysis shows consistent patterns (Knooihuizen 2013, this paper?)

**hol** [h̥øl, h̥ø̞l], sb., a young coalfish, esp. a two- (or three-) year-old coalfish, comm. in the compd. hol-piltek [pálløk]. U., Yn. n. hol for older *öl*, either (and rather) = O.N. áll, m., an eel, or = O.N. völfr, m., a cylinder, round stick — in both cases alluding to the longish, narrow shape of the fish. Cf. ol in ollek = No. vallonga, f., a young ling. hol-piltek thus prob. from an original *ál* (or *val*)-pilfr (piltungr).

Shetland Scots

- Conservative Scots dialect
  - Immigrant koiné (McColl Millar 2008, Knooihuizen 2009)
  - Input from Angus, Fife, Lothian
  - North Germanic substrate
- Complicated linguistic history
  - Several waves of Scots and North Germanic influence
  - Poorly documented substrate
- Currently: dialect obsolescence (Smith & Durham 2011, 2012)
1.2 Quantity in Shetland

Scottish Vowel Length Rule

- Developed in the 15th-17th centuries ([Aitken 1981](#))
- Lax vowels are always short
- Tense vowels are short, unless followed by
  - Morpheme boundary
  - Voiced fricatives /v z ð/
  - /ɪ/
- Regional variation:
  - Participating vowels
  - Constraints on application

SVLR in Shetland Scots

- See [Knooihuizen (2009)](#)
- Based on LAS ([Mather & Speitel 1975–1986](#))
  - /Y/ and /W/ are short
  - /I/ and /U/: classic SVLR pattern
  - /E/: classic SVLR pattern, BAIT set always long
  - /O/: classic SVLR pattern, long before /l/ and nasals
  - /A/: classic SVLR pattern, long if from *au, *al

Overall classic SVLR with some compensatory lengthening?

The phonetics of quantity in Shetland

- Inverse correlation of vowel and consonant duration ([van Leyden 2004](#))
- The inverse correlation is much stronger in Shetland than in Orkney or Edinburgh
- ...but weaker than in Norwegian

Quantity in Old Norse

- In Old Norse, all types of syllable weight were allowed (e.g. [Haugen 1976](#), [Riad 1992](#), [Kristoffersen 2011](#))
- Old Norwegian
  - Monosyllables: *son* 'son', *sól* 'sun', *hóll* 'hall', *sótt* 'illness'
  - Disyllables: *syni* 'son-DAT.SG', *sólu* 'sun-DAT.SG', *hóllu* 'hall-DAT.SG', *sóttu* 'illness-DAT.SG'
- (Except CV monosyllables)
Quantity shifts

- The 'great quantity shift': all stressed syllables become obligatorily CVX.
- Everywhere except some inland Norwegian and Swedish dialects and Fenno-Swedish, but including Faroese and Icelandic.
- Dates between mid 13th to mid 16th century (Haugen 1976).
- Toward the end of this period for Insular North Germanic (Kristján Arnason 1980, Lindqvist 2003).
- Superheavy syllables shorten, light syllables have either vowel or consonant lengthening.

Hesselman’s laws

- Originally by Hesselman (1902), see also Riad (1992).
- Not really Lautgesetze but rather tendencies:
  1. CV̆C undergoes lengthening earlier than CV̆CV.
  2. Low vowels [a æ] always lengthen.
  3. With non-low vowels, either the consonant or the vowel lengthens.

Consonant influence on lengthening

- Central and northern Swedish: no lengthening before fortis obstruents [p t k s] (Hesselman 1902), also [r].
- Norwegian: generally vowel lengthening (with local exceptions not relevant to us), no notable consonant asymmetries.

Quality shifts

- Standard varieties of peninsular North Germanic are mutatis mutandis like most of English.
- Modern short vowels are lax, modern long vowels are tense (Kristoffersen 2003, Riad 2014).
- Central Standard Swedish bit ['bít'] ‘piece’ ≠ vinn ['vין'] ‘win!’.
- Modern insular North Germanic (Kristján Arnason 1980, 2011), conservative western Norwegian (Sandøy 1983)
  - ON long vowels are tense (→ diphthongized), long or short: Icelandic bīta [ˈpiːta] ‘bite’, hvitt [ˈkfɪht] ‘white-NEUT.NOM.SG.’
  - ON short vowels are lax (→ lowered), long or short: Icelandic vīta [ˈvɪːta] ‘know’, fiskur [ˈfɪskʏr] ‘fish’ (WestNo vēta, NorthNo fesk).

1 An alternative notation focusing on rhymes in stressed monosyllables is also used (e.g. Kristján Arnason 1980; Barnes 1994: 437 on Shetland Norn). The correspondences are as follows: CV = −VC (short, ON son); CVV = −VVC (vowel-long, ON sól); CVC = −VCC (consonant-long, ON hǫll); CVVC = −VVCC (overlong, ON sótt).
1.3 The research question

Vowel length in Shetland Norn

It could well be that the syllabic structure of modern Shetland speech reflects, at least in part, a Norn substratum. A thousand pities then that this phenomenon never seems to have been observed by Jakobsen. [...] Once again we are faced with an impasse on a fundamental issue of Norn phonology, and it is not easy to see any satisfactory way forward.

(Barnes 1991: 437)

Competing systems in Shetland Norn

- Shetland Scots has been argued to evidence new-dialect formation mechanisms (McColl-Miliar 2008, Knooihuizen 2009)
- Can we see traces of multiple inputs in Shetland Norn?
- If the input systems agree in some feature, we expect the outcome to have that feature
- If the input systems disagree, then some features will be lost due to focusing
- Our focus here is on differences in quantity behaviour between Scots and (West) Nordic

<table>
<thead>
<tr>
<th>Feature</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>CVC syllable</td>
<td>Short, lax</td>
</tr>
<tr>
<td></td>
<td>ON <em>fiskr</em> → ModLc <em>f[i]skur</em></td>
</tr>
<tr>
<td></td>
<td>Short, lax</td>
</tr>
<tr>
<td></td>
<td>OSScots <em>kist</em> → Scots <em>k[i]st</em></td>
</tr>
<tr>
<td>CVV syllable</td>
<td>Long, tense/diphthongized</td>
</tr>
<tr>
<td></td>
<td>ON <em>bíta</em> → ModLc <em>b[iː]ta</em></td>
</tr>
<tr>
<td></td>
<td>Short or long, tense/diphthongized</td>
</tr>
<tr>
<td></td>
<td>OSc <em>mete</em> → Sc <em>m[i]t</em></td>
</tr>
<tr>
<td></td>
<td>OSc <em>leve</em> → Sc <em>l[iː]v</em></td>
</tr>
<tr>
<td>CV syllable</td>
<td><em>Long, tense or lax/lowered</em></td>
</tr>
<tr>
<td></td>
<td>ON <em>skin</em> ‘sheen’ → NoNynorsk <em>sk[iː]n</em></td>
</tr>
<tr>
<td></td>
<td>ON <em>lifa</em> → ModLc <em>l[iː]fa</em>, NoNynorsk <em>leve</em></td>
</tr>
<tr>
<td></td>
<td><em>Short, lax</em></td>
</tr>
<tr>
<td></td>
<td>OSc <em>bit</em> → Sc <em>b[i]t</em></td>
</tr>
<tr>
<td>CVVC syllable</td>
<td>Short, tense or lax/lowered</td>
</tr>
<tr>
<td></td>
<td>ON <em>hvít</em> ‘white-NEUT’ → ModLc <em>hv[i]tt</em></td>
</tr>
<tr>
<td></td>
<td>→ ModSw <em>v[i]tt</em></td>
</tr>
<tr>
<td>Restrictions on length</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>SVLR</td>
</tr>
</tbody>
</table>

Table 1: Differences in quantity shift outcomes
Research questions, bluntly put

· How reliable is the data?
  – Is it just a mess of overanalysed transcriptions?
  – Is it phonologically just Shetland Scots?

· If it does represent Norn in some way...
  – Can we discover what happened to quantity in Norn?
  – Was it in line with what happened in West Nordic otherwise?
  – Was there any input from Scots?

2 Analysis

2.1 Data and methods

Etymological Dictionary data

· Transcriptions from G and H headwords, \( n = 1614 \)
  – Included if Old Norse (putative) etymology given

· Coded for...
  – Norn vowel quantity, quality
  – Old Norse vowel quantity, quality
  – Norn, Old Norse following consonant
  – Old Norse syllable type\(^2\)

· Norn vowels
  – Our attempt to convert Jakobsen’s descriptions to IPA and reduce the number of categories
  – Based on his description and transcriptions of Faroese he made using the same system (Hammershaimb 1886–1894, compared with Lockwood 1977)
  – Also coded for ‘tense’/‘lax’ based on these interpretations

Analysis

· Many conditions poorly represented
· Focus on ON /i u y e o a/
  – Reasonably well represented in the corpus
  – Reflexes expected to participate in SVLR pattern, if any is found

· Quantitative analysis: are the observed distributions just noise?
· Generalized linear mixed models with \( \text{lme4} \) (Bates et al. 2015)

\(^2\)Unlike in his transcriptions for Faroese, Jakobsen does not mark consonant length in his Shetland Norn transcriptions. Less than a handful of isolated examples were found in our data.
2.2  Sanity checks

Reflexes of Old Norse /a/

- We come back to ON a later, but it mostly a low, unrounded vowel
- ON á, whether short or long, is overwhelmingly round
- This is in line with expectations
  - Continental North Germanic <å>
  - Faroese short [ɔ] ~ long [ɔa]

Reflexes of Old Norse /ø/
Vowel length in Shetland Norn

Reflexes of ON /ø/ by ON syllable type

- ON ø often becomes [ø] when short in Norn and [u] when long in Norn
- Lindqvist (2003) reconstructs [øu(ː)]

Reflexes of Old Norse /i/

8
• ON \( i \) is mostly [iː] or maybe [eː]
• ON \( i \), unless it lengthens, is [i] ~ [e] ~ [ə]
• Difficult to quantify but consistent to some extent with the West Nordic development
• Cf. ON higr \( \rightarrow \) Norn [hɪːg]

Preliminary conclusions

• Not necessarily 'phonetics run riot'
• Many developments visible in the data that make sense in a West Nordic context
  – Jakobsen (1928–1932) comments on the ON \( å \) \( \rightarrow \) Norn [ø] development
  – The Faroese-like ON \( å \) \( \rightarrow \) Norn [ø] change does not seem as notable in the literature

2.3 SVLR in Shetland Norn

Synchronic length in Norn

• Synchronically, lax vowels are almost never long in the data

![Graph of Norn vowel length](image)

• Tense vowels can be short or long
• Is this an SVLR pattern?
Vowel length in Shetland Norn

Synchronic SVLR in Norn

- If the data show Scots phonology, we expect a synchronic SVLR effect
Testing for synchronic SVLR

- A synchronic SVLR effect would imply long vowels
  - Before voiced fricatives and /r/
  - Before a morpheme boundary

- ...but not elsewhere
- We try to quantify this using logistic regression

```r
full_fit <- glmer(norn.long ~ norn.svlr + norn.tense +
                  on.quality + on.long +
                  (1|norn.foll.c),
                  data=model_data,
                  family=binomial(link=logit))
```

- Synchronic conclusion
  - Synchronic tenseness and ON length are good predictors of Norn length
  - ...but SVLR makes a contribution over and above these

- So it just Scots?
A closer look at the random effects

- The regression tells us that on average an SVLR context promotes length of the preceding vowel.
- But it seems that the conditioning of length in Norn is not fully in line with the SVLR.

![Estimated random effects of following consonant](image)

- These results should be taken with a pinch of salt, but...
  - Contexts promoting lengthening (beyond the fixed effects): /b k ɹ n s/
  - Contexts disfavouring lengthening: /t ɹ r/
- Shortening beyond SVLR: /t/ is usually from ON tt, /ɹ/ is a coda
- /ɹ/ seems genuinely out of line
- Lengthening beyond SVLR: recall that West Nordic preferentially lengthens vowels in CV syllables

3 Discussion

3.1 North Germanic features in Shetland Norn?

General quantity facts

- Generally, ON vowels keep their length in Shetland Norn
  - Relatively little lengthening of short vowels, even in the presence of an SVLR effect
– Relatively little shortening of long vowels (other than elimination of overlength, shared with West Nordic)

• Not clear whether there are coexisting systems or just preservation of archaic features
• We do suggest that the North Germanic quantity system was not completely clobbered by the SVLR

Low vowel lengthening

• ON short a does undergo lengthening quite often in this data
• There is nothing special about /a/ in Scots vowel systems
• Across North Germanic, ON a and æ are the vowels that most regularly undergo lengthening
• Even in varieties with consonantal restrictions on lengthening
• This is suggestive

The effect of SVLR

• Despite an apparent synchronic SVLR effect, the restrictions on length go beyond it
• LAS data show SVLR to be fairly normal in the Scots lexicon of Shetland Scots
• Shetland Scots also lengthens [a] from *au, *al, but that does not happen in this material
• Various interpretations possible, but we suggest Jakobsen’s data does contain material with a West Nordic system

3.2 Summary

Conclusions

• Vowel quantity information in the Jakobsen material is not just chaotic noise
• The vowel quantity system is not identical to that of Shetland Scots
• Some of the features of the quantity system have clear precursors or direct parallels elsewhere in West Nordic
• It is worth examining the material for clues regarding the possible North Germanic substrate of Shetland Scots
• See Lehiste (1965) on this kind of archaeology

References

## Table 2: The full model and some models with terms excluded (outcome variable: Norn vowel length)

<table>
<thead>
<tr>
<th>Term</th>
<th>Full model</th>
<th>No SVLR effect</th>
<th>No ON quantity effect</th>
<th>No tenseness effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>-4.91***</td>
<td>-4.65***</td>
<td>-4.63***</td>
<td>-2.97***</td>
</tr>
<tr>
<td></td>
<td>(0.54)</td>
<td>(0.59)</td>
<td>(0.53)</td>
<td>(0.44)</td>
</tr>
<tr>
<td>Norn SVLR context</td>
<td>1.89***</td>
<td>2.21***</td>
<td>1.99***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.52)</td>
<td>(0.49)</td>
<td>(0.47)</td>
<td></td>
</tr>
<tr>
<td>Norn tenseness</td>
<td>3.96***</td>
<td>3.98***</td>
<td>4.04***</td>
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</tr>
<tr>
<td></td>
<td>(0.39)</td>
<td>(0.39)</td>
<td>(0.39)</td>
<td></td>
</tr>
<tr>
<td>ON [a]</td>
<td>-0.12</td>
<td>-0.05</td>
<td>-0.26</td>
<td>0.65*</td>
</tr>
<tr>
<td></td>
<td>(0.31)</td>
<td>(0.32)</td>
<td>(0.30)</td>
<td>(0.26)</td>
</tr>
<tr>
<td>ON [e]</td>
<td>0.13</td>
<td>0.11</td>
<td>-0.16</td>
<td>0.44</td>
</tr>
<tr>
<td></td>
<td>(0.39)</td>
<td>(0.39)</td>
<td>(0.38)</td>
<td>(0.33)</td>
</tr>
<tr>
<td>ON [o]</td>
<td>-0.78*</td>
<td>-0.80*</td>
<td>-0.58</td>
<td>-0.01</td>
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<tr>
<td></td>
<td>(0.37)</td>
<td>(0.38)</td>
<td>(0.36)</td>
<td>(0.32)</td>
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<tr>
<td>ON [u]</td>
<td>-1.97***</td>
<td>-1.95***</td>
<td>-1.69***</td>
<td>-1.00***</td>
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<td>(0.43)</td>
<td>(0.43)</td>
<td>(0.41)</td>
<td>(0.37)</td>
</tr>
<tr>
<td>ON [y]</td>
<td>-0.89</td>
<td>-0.93</td>
<td>-0.77</td>
<td>-0.05</td>
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<td>(0.48)</td>
<td>(0.49)</td>
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<td>(0.42)</td>
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<tr>
<td>ON long vowel</td>
<td>1.32***</td>
<td>1.45***</td>
<td>1.71***</td>
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<td></td>
<td>(0.24)</td>
<td>(0.24)</td>
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<tr>
<td>AIC</td>
<td>763.75</td>
<td>774.91</td>
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<td>992.06</td>
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<td>BIC</td>
<td>814.94</td>
<td>829.98</td>
<td>839.43</td>
<td>1038.12</td>
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<tr>
<td>Log Likelihood</td>
<td>-371.88</td>
<td>-378.45</td>
<td>-387.68</td>
<td>-487.03</td>
</tr>
</tbody>
</table>

***p < 0.001, **p < 0.01, *p < 0.05


Low, George. 1879. *A tour through the islands of Orkney and Shetland containing hints relative to their ancient, modern and natural history, collected in 1774*. Joseph Anderson (ed.). Kirkwall: Peace.


