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Vowel length in Shetland Norn

Contact, change, and competing systems

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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 2015)
 - Similar to Faroese in many respects (Barnes 1998)
 - * e.g. *Verschärfung*, diphthongisation of /i: = y:/, loss of /θ 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

- A few medieval documents (Barnes 1998)
- The Lord's Prayer, a ballad, a word list (Low 1879, Hægstad 1900, Rendboe 1984, 1987, 1989, 1990, 1993)
- 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 (Knoolhuizen 2013, this paper?)

hol¹ [hōl, hō^əl], sb., *a young coal-fish*, esp. *a two- (or three-) year-old coalfish*, comm. in the compd. *hol-piltek* [pʌ^hˈlɛk]. U., Y^{h,n}. *hol* for older *ol, either (and rather) = O.N. *áll*, m., *an eel*, or = O.N. *vølr*, 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)-piltr (*piltungr*).

Shetland Scots

- Conservative Scots dialect
 - Immigrant koiné (McColl Millar 2008, Knoolhuizen 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/
 - /r/
- 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, Kristofersen 2011)
- Old Norwegian
 - Monosyllables: *son* 'son', *sól* 'sun', *hǫll* 'hall', *sótt* 'illness'
 - Disyllables: *syni* 'son-DAT.SG', *sólu* 'sun-DAT.SG', *hǫllu* 'hall-DAT.SG', *sóttu* 'illness-DAT.SG'
- (Except CV monosyllables)

Quantity shifts

- The ‘great quantity shift’: all stressed syllables become obligatorily CVX¹
- 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)
- ☞ Towards the end of this period for Insular North Germanic (Kristján Árnason 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. CVC undergoes lengthening earlier than CVCV
 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 2000, Riad 2014)
- ☞ Central Standard Swedish *bit* [ˈbi:t] ‘piece’ ≠ *vinn* [ˈvɪn:] ‘win!’
- Modern insular North Germanic (Kristján Árnason 1980, 2011), conservative western Norwegian (Sandøy 1985)
 - ON long vowels are tense (→ diphthongized), long or short: Icelandic *bíta* [ˈpi:ta] ‘bite’, *hvítt* [kfiht] ‘white-NEUT.NOM.SG’
 - ON short vowels are lax (→ lowered), long or short: Icelandic *vita* [ˈvi:ta] ‘know’, *fiskur* [ˈfiskyr] ‘fish’ (WestNo *veta*, NorthNo *fesk*)

¹An alternative notation focusing on rhymes in stressed monosyllables is also used (e.g. Kristján Árnason 1980: 16; Barnes 1991: 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 *holl*); 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 Millar 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

| Feature | Outcome | |
|------------------------|--|---|
| | West Nordic | Scots |
| CVC syllable | Short, lax ON <i>fiskr</i> → ModIc <i>f[ɪ]skur</i> | Short, lax OScots <i>kist</i> → Scots <i>k[ɪ]st</i> |
| CVV syllable | Long, tense/diphthongized ON <i>bíta</i> → ModIc <i>b[i:]ta</i> | Short or long, tense/diphthongized OSc <i>mete</i> → Sc <i>m[i]t</i> OSc <i>leve</i> → Sc <i>l[i:]v</i> |
| CV syllable | Long, tense or lax/lowered ON <i>skin</i> 'sheen' → NoNynorsk <i>sk[i:]n</i> ON <i>lifa</i> → ModIc <i>l[ɪ:]fa</i> , NoNynorsk <i>leve</i> | Short, lax OSc <i>bit</i> → Sc <i>b[ɪ]t</i> |
| CVVC syllable | Short, tense or lax/lowered ON <i>hvítt</i> 'white-NEUT' → ModIc <i>hv[i]tt</i> → ModSw <i>v[ɪ]tt</i> | It's complicated... |
| Restrictions on length | No | SVLR |

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 type²
- 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 1886–1891, compared with Lockwood 1977)
 - Also coded for 'tense'/'lax' based on these interpretations

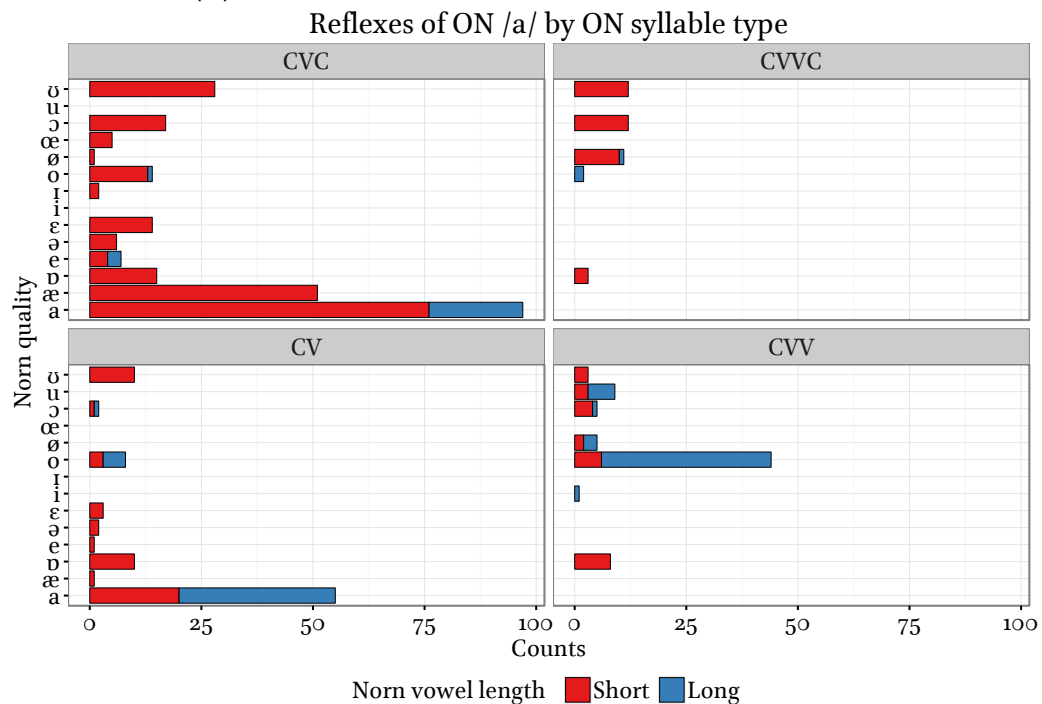
Analysis

- 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 lme4 (Bates et al. 2015)
- ☞ More as a sanity check

²Unlike 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.

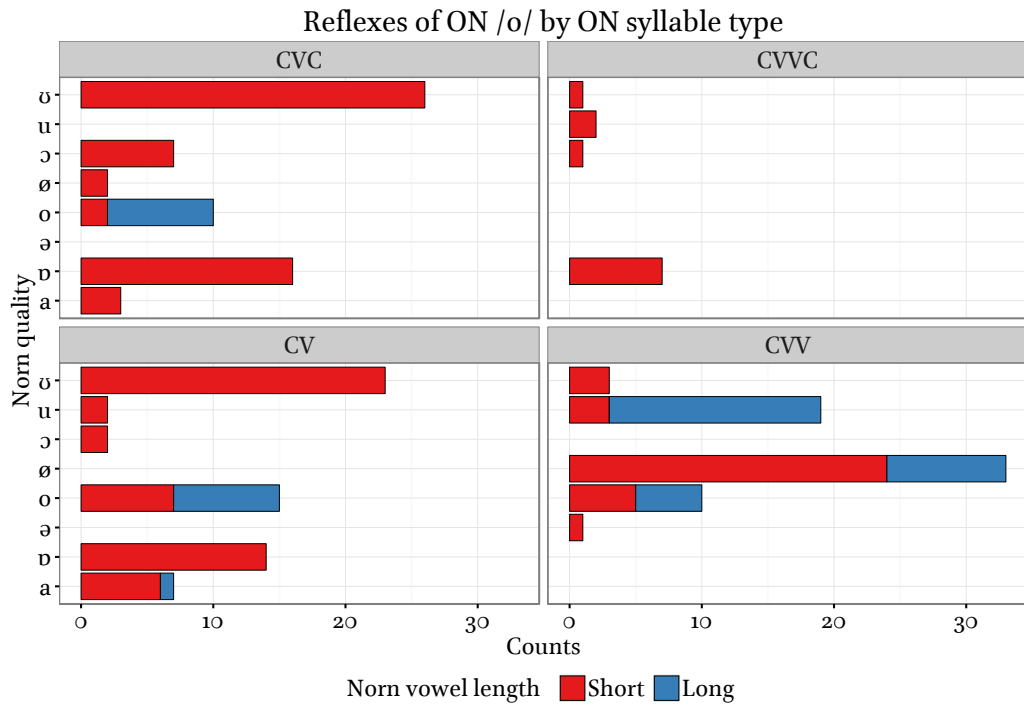
2.2 Sanity checks

Reflexes of Old Norse /a/



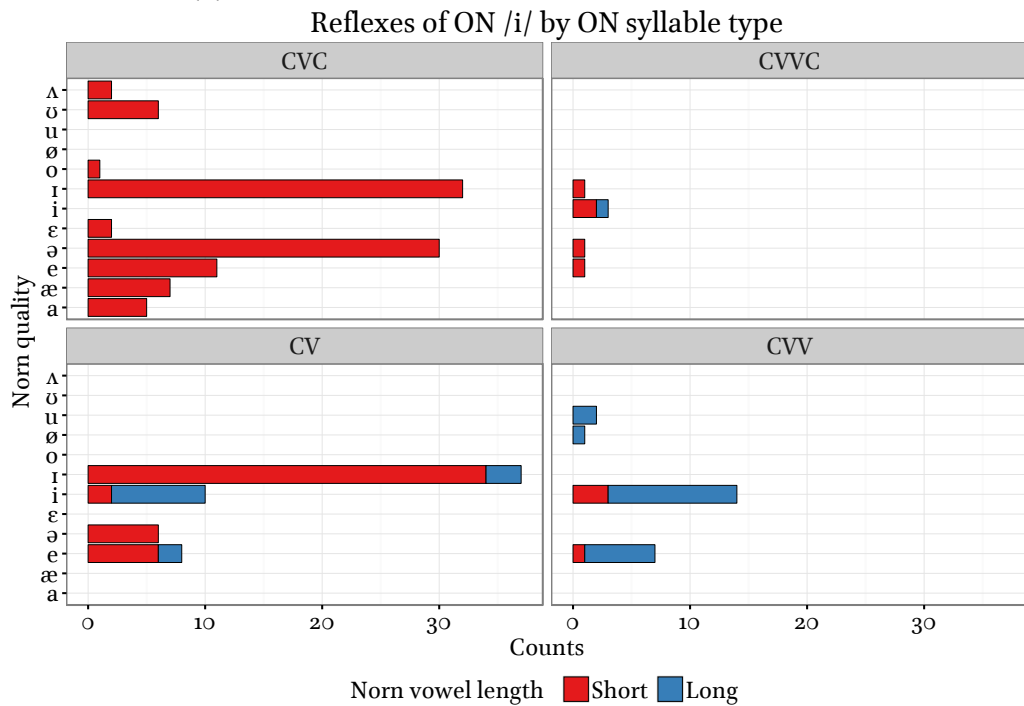
- We come back to ON *a* later, but it mostly a low, unrounded vowel
- ON *á*, whether short or long, is overwhelmingly round
- This is in line with expectations
 - Continental North Germanic <ǫ̃>
 - Faroese short [ɔ] ~ long [ɔa]

Reflexes of Old Norse /o/



- ON *ó* often becomes [ø] when short in Norn and [u] when long in Norn
- Cf. Faroese: <ó> is short [œ]/[ɔ] ~ long [ou] (Lockwood 1977)
- Lindqvist (2003) reconstructs [øu(:)]

Reflexes of Old Norse /i/



- ON *í* is mostly [i:] or maybe [e:]
- ON *i*, unless it lengthens, is [ɪ] ~ [e] ~ [ə]
- Difficult to quantify but consistent to some extent with the West Nordic development
- Cf. ON *higr* → Norn [hɪrg]

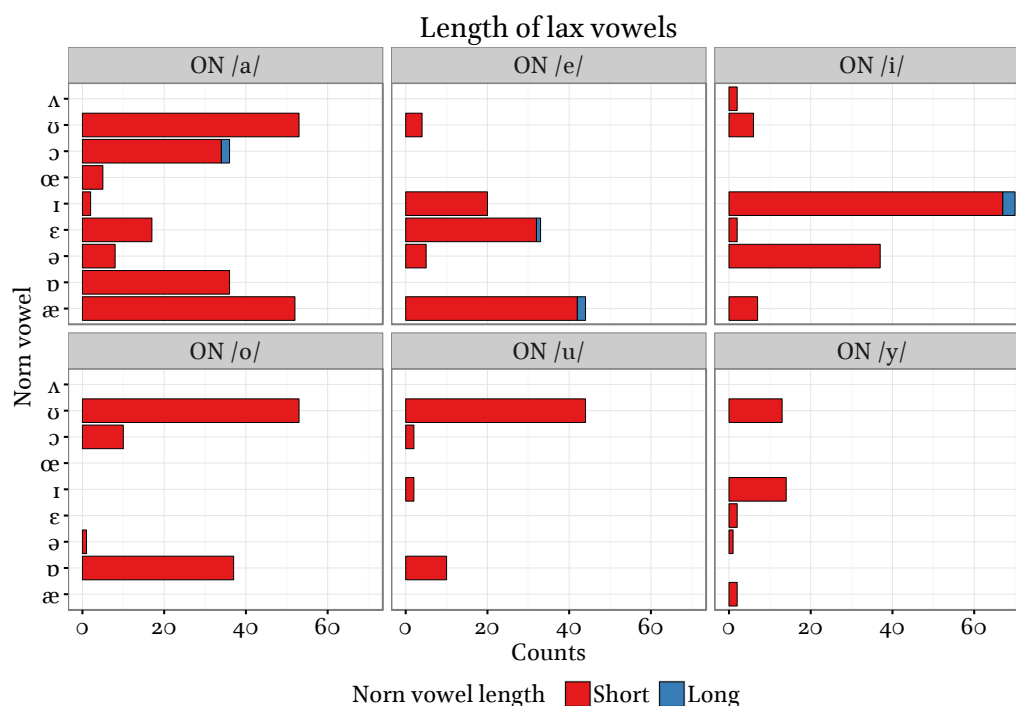
Preliminary conclusions

- 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 *á* → Norn [o] development
 - The Faroese-like ON *ó* → Norn [ø] change does not seem as notable in the literature

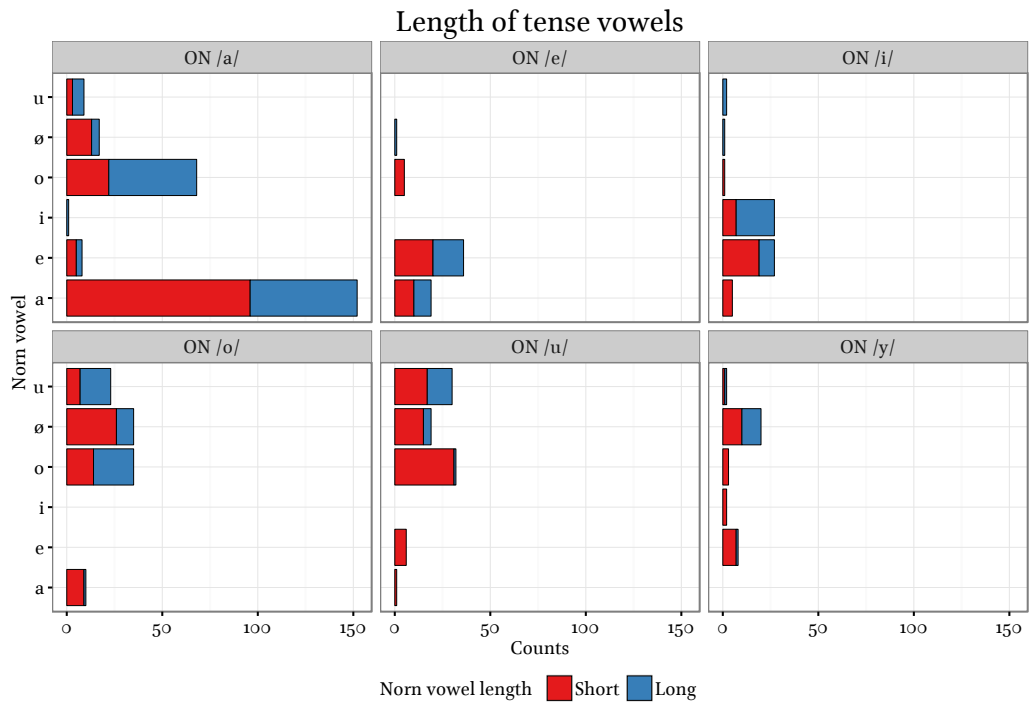
2.3 SVLR in Shetland Norn

Synchronic length in Norn

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

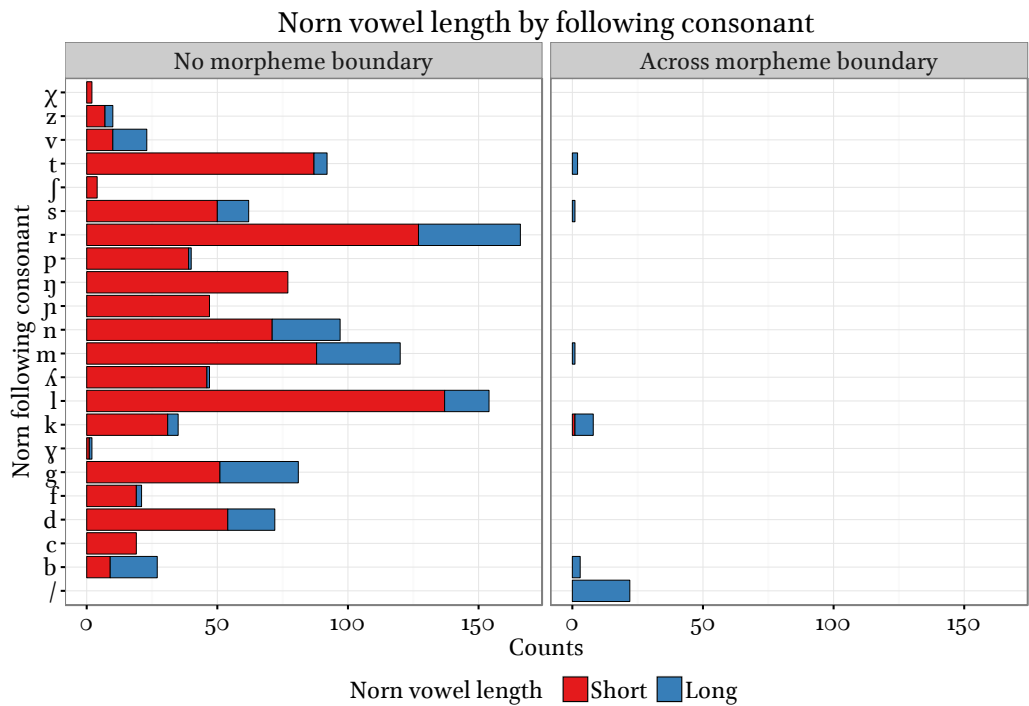


- Tense vowels can be short or long
- Is this an SVLR pattern?



Synchronic SVLR in Norn

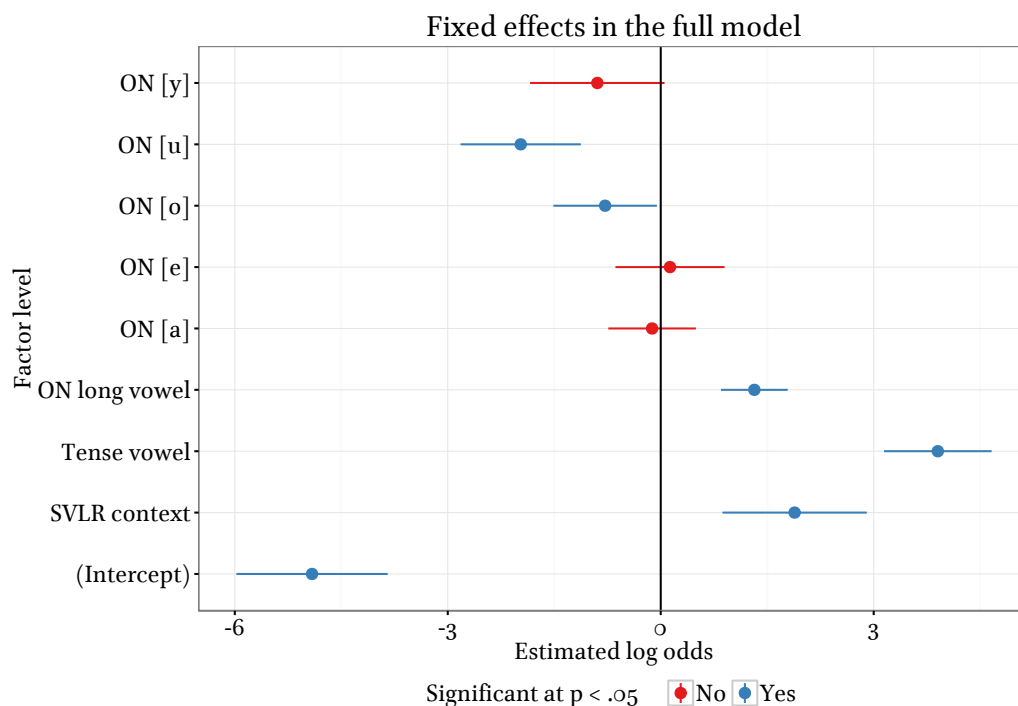
- If the data show Scots phonology, we expect a synchronic SVLR effect



Testing for synchronic SVLR

- A synchronic SVLR effect would imply long vowels
 - Before voiced fricatives and /r/
 - Before a morpheme boundary
 - Before Norm [d] from ON ∂ , as ∂ -stopping in Shetland counterbleeds SVLR (Aitken 1981, van Leyden 2004)
- ...but not elsewhere
- We try to quantify this using logistic regression

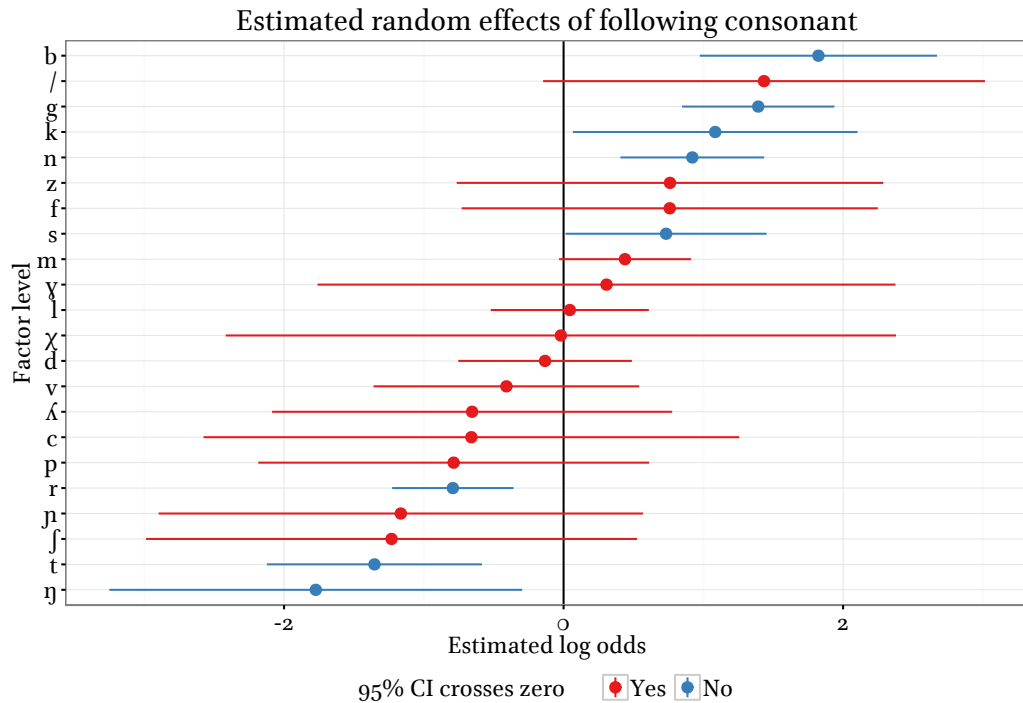
```
full_fit <- glmer(norn.long ~ norn.svlr + norn.tense +
                 on.quality + on.long +
                 (1|norn.foll.c),
                 data=model_data,
                 family=binomial(link=logit))
```



- Synchronic conclusion
 - Synchronic tenseness and ON length are good predictors of Norm 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



- These results should be taken with a pinch of salt, but...
 - Contexts promoting lengthening (beyond the fixed effects): /b k g n s/
 - Contexts dispreferring lengthening: /t ɲ r/
- Shortening beyond SVLR: /t/ is usually from ON *tt*, /ɲ/ is a coda
- /r/ 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 archæology

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| | Full model | No SVLR effect | No ON quantity effect | No tenseness effect |
|-------------------|--------------------|--------------------|-----------------------|---------------------|
| (Intercept) | −4.91*** (0.54) | −4.65*** (0.59) | −4.63*** (0.53) | −2.97*** (0.44) |
| Norn SVLR context | 1.89*** (0.52) | | 2.21*** (0.49) | 1.99*** (0.47) |
| Norn tenseness | 3.90*** (0.39) | 3.98*** (0.39) | 4.04*** (0.39) | |
| ON [a] | −0.12 (0.31) | −0.05 (0.32) | −0.26 (0.30) | 0.65* (0.26) |
| ON [e] | 0.13 (0.39) | 0.11 (0.39) | −0.16 (0.38) | 0.44 (0.33) |
| ON [o] | −0.78* (0.37) | −0.80* (0.38) | −0.58 (0.36) | −0.01 (0.32) |
| ON [u] | −1.97*** (0.43) | −1.95*** (0.43) | −1.69*** (0.41) | −1.00** (0.37) |
| ON [y] | −0.89 (0.48) | −0.93 (0.49) | −0.77 (0.47) | −0.05 (0.42) |
| ON long vowel | 1.32*** (0.24) | 1.45*** (0.24) | | 1.71*** (0.21) |
| AIC | 763.75 | 774.91 | 793.36 | 992.06 |
| BIC | 814.94 | 820.98 | 839.43 | 1038.12 |
| Log Likelihood | −371.88 | −378.45 | −387.68 | −487.03 |

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

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

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