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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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)

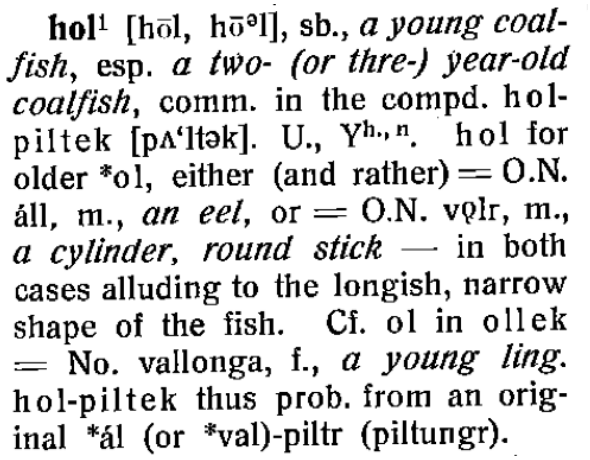
Shetland Norn

- West / Insular North Germanic language
  - Potentially some Celtic influence (Lindqvist 2015)
  - Similar to Faroese in many respects (Barnes 1998)
    - e.g. *Verschärfung*, diphthongisation of /iː = yː/, 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 (Knooihuizen 2013, this paper?)



hol[1] [hōl, hō^{ə}l], sb., *a young coal-fish*, esp. *a two- (or thre-) year-old coalfish*, comm. in the compd. hol-piltek [pʌ'ltək]. U., Y$^{h.,n.}$ hol for older *ol, either (and rather) = O.N. áll, m., *an eel*, or = O.N. vǫlr, 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, 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/
  - /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, Kristoffersen 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 CVX[1]
- 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. 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 2000, Riad 2014)

☞ Central Standard Swedish *bit* [ˈbiːt] 'piece' ≠ *vinn* [ˈʊmː] '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* [ˈpiːta] 'bite', *hvítt* [kfiht] 'white-NEUT.NOM.SG'
  - ON short vowels are lax (→ lowered), long or short: Icelandic *vita* [ˈvɪːta] 'know', *fiskur* [ˈfɪskʏr] 'fish' (WestNo *veta*, NorthNo *fesk*)

[1] An 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 *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 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

	Outcome	
Feature	West Nordic	Scots
CVC syllable	Short, lax ON *fiskr* → ModIc *f*[ɪ]s*kur*	Short, lax OScots *kist* → Scots *k*[ɪ]*st*
CVV syllable	Long, tense/diphthongized ON *bíta* → ModIc *b*[iː]*ta*	*Short* or long, tense/diphthongized OSc *mete* → Sc *m*[i]*t* OSc *leve* → Sc *l*[iː]*v*
CV syllable	*Long*, *tense* or lax/lowered ON *skin* 'sheen' → NoNynorsk *sk*[iː]*n* ON *lifa* → ModIc *l*[ɪː]*fa*, NoNynorsk *leve*	*Short*, lax OSc *bit* → Sc *b*[ɪ]*t*
CVVC syllable	Short, tense or lax/lowered ON *hvítt* 'white-NEUT' → ModIc *hv*[i]*tt* → ModSw *v*[ɪ]*tt*	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 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 1886–1891, compared with Lockwood 1977)
  - Also coded for 'tense'/'lax' based on these interpretations

Analysis

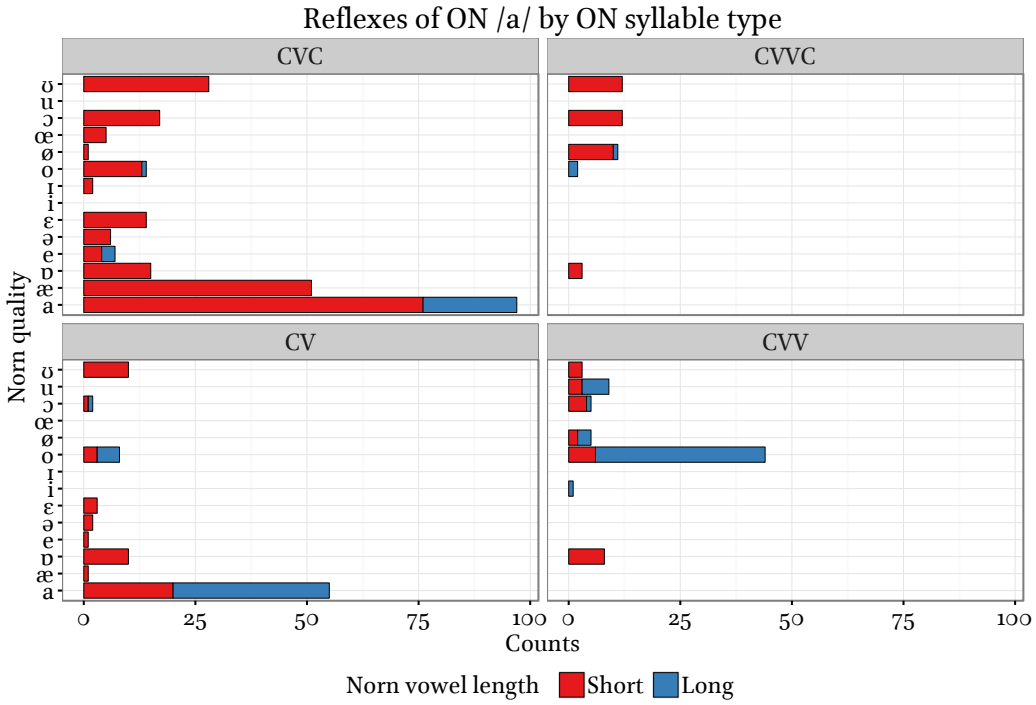
- Many conditions poorly represented
- Focus on ON /i u y e o a/
  - Reasonably well represented in the corpus
  - Reflexes expected to participate in SVLR pattern, if any is found
- Quantitative analysis: are the observed distributions just noise?
- Generalized linear mixed models with `lme4` (Bates et al. 2015)

☞ More as a sanity check

[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.

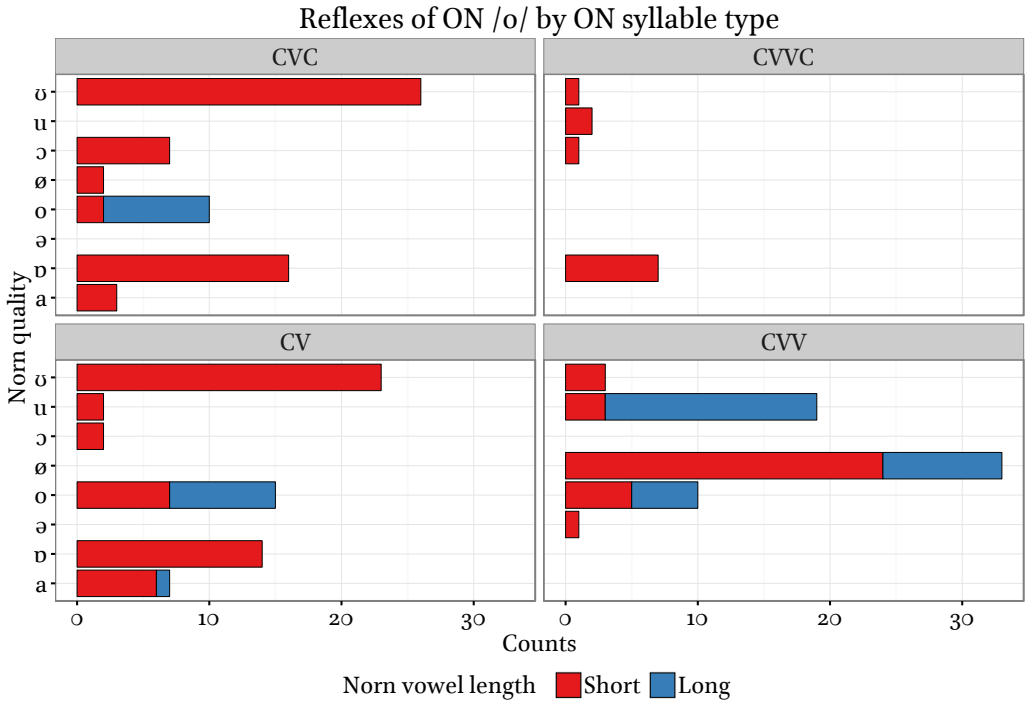
2.2 Sanity checks

Reflexes of Old Norse /a/



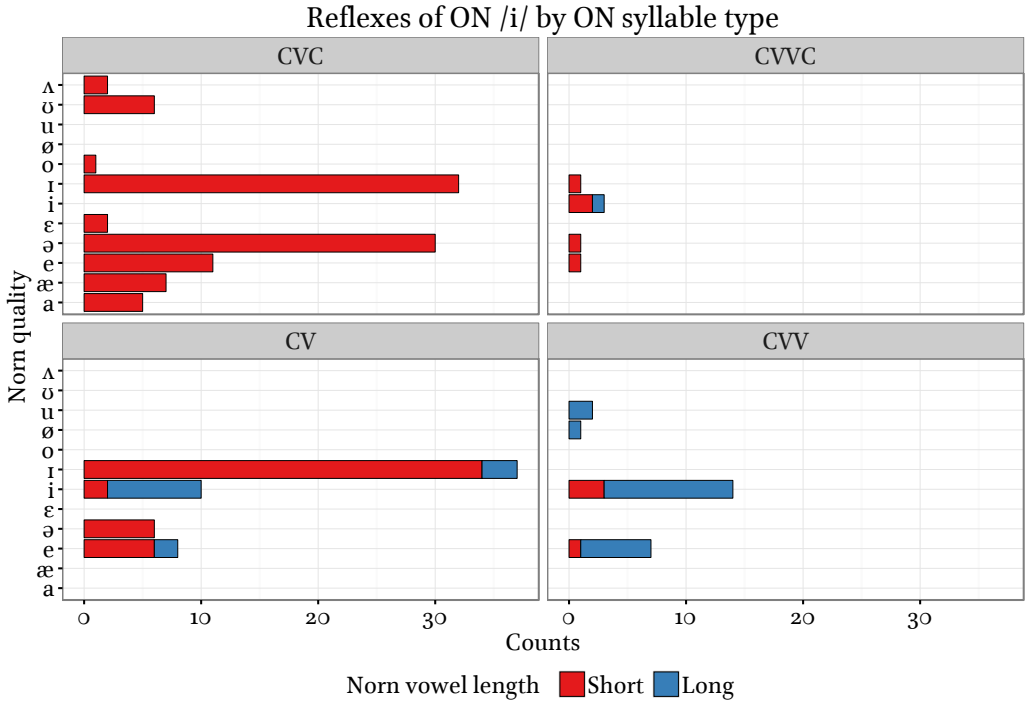
- We come back to ON *a* later, but it mostly a low, unrounded vowel
- ON *á*, whether short or long, is overwhelmingly round
- This is in line with expectations
  - Continental North Germanic <å>
  - Faroese short [ɔ] ∼ long [ɔa]

Reflexes of Old Norse /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(ː)]

Reflexes of Old Norse /i/



- ON *í* is mostly [iː] or maybe [eː]
- 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 [hɪːg]

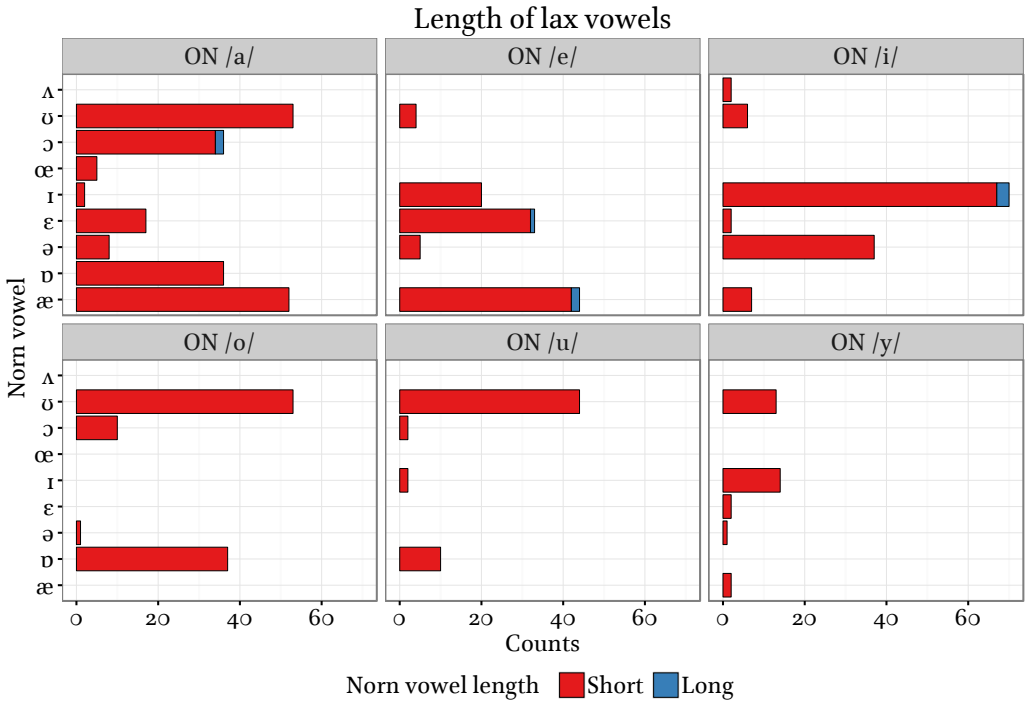
Preliminary conclusions

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

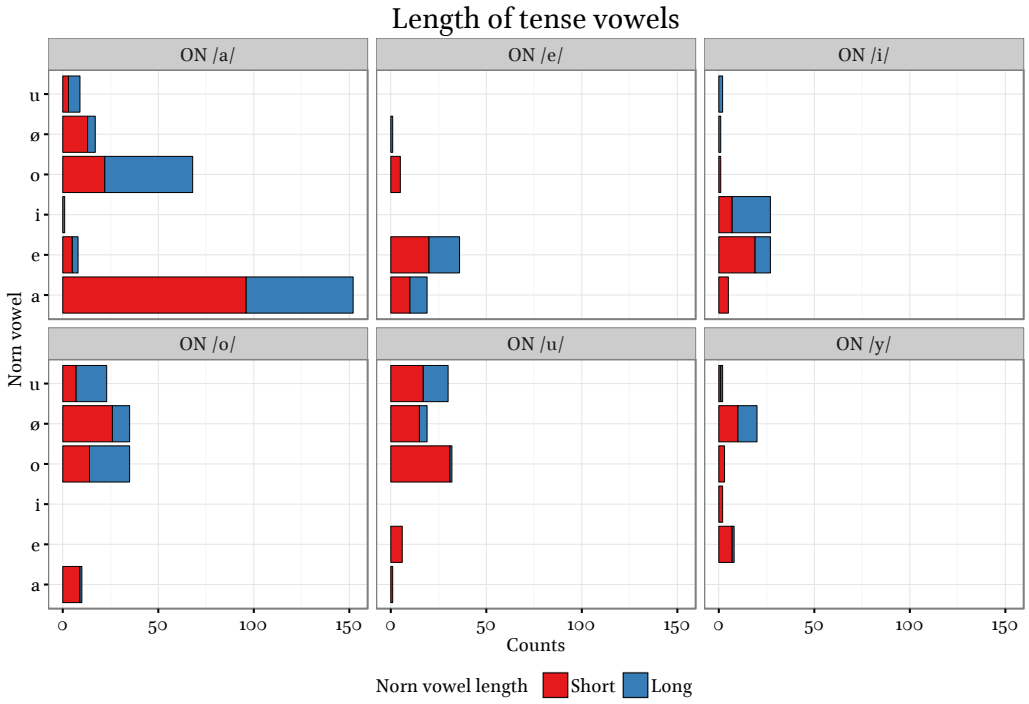
2.3 SVLR in Shetland Norn

Synchronic length in Norn

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

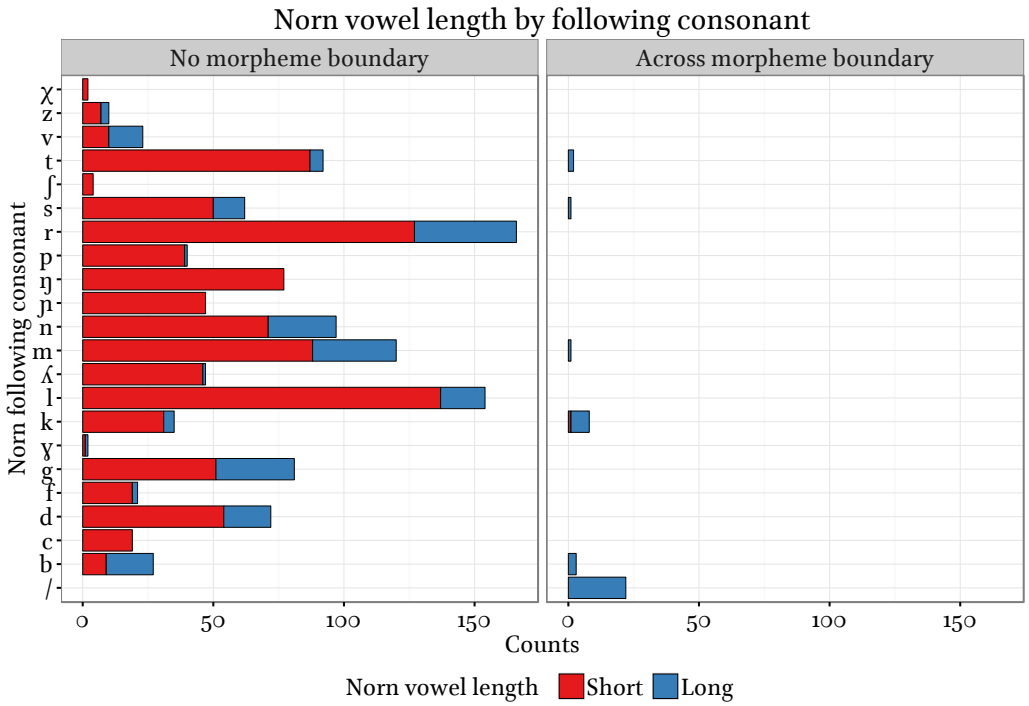


- Tense vowels can be short or long
- Is this an SVLR pattern?



Synchronic SVLR in Norn

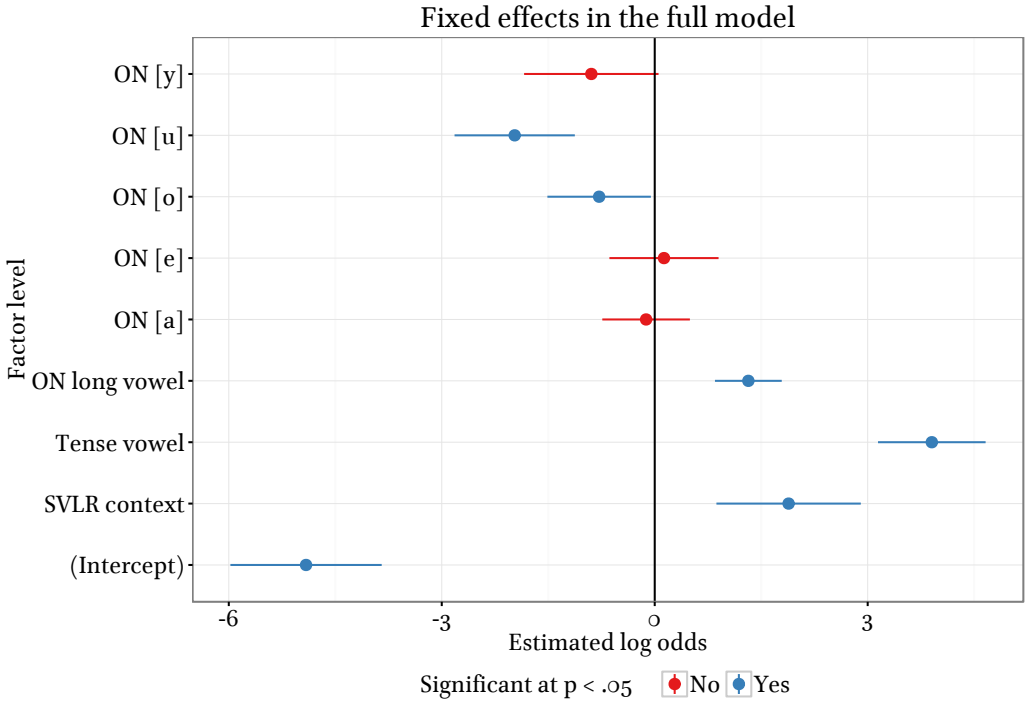
- If the data show Scots phonology, we expect a synchronic SVLR effect



Testing for synchronic SVLR

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

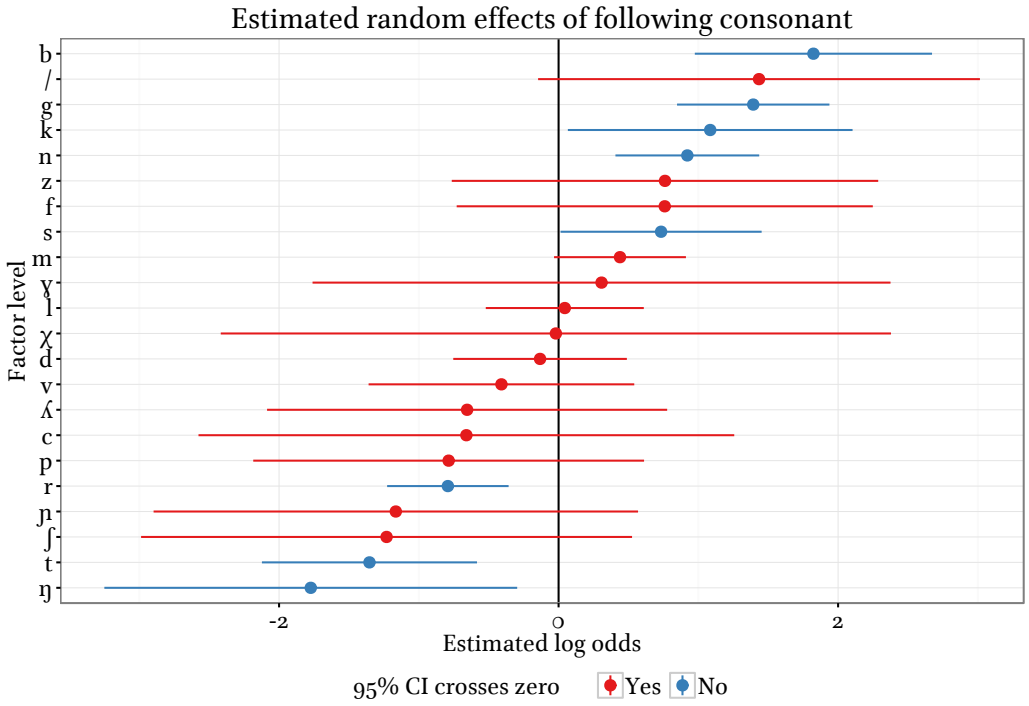
```
full_fit <- glmer(norn.long ~ norn.svlr + norn.tense +
                      on.quality + on.long +
                      (1|norn.foll.c),
                  data=model_data,
                  family=binomial(link=logit))
```



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



- 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 ŋ r/
- Shortening beyond SVLR: /t/ is usually from ON *tt*, /ŋ/ 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^{***}	-4.65^{***}	-4.63^{***}	-2.97^{***}
	(0.54)	(0.59)	(0.53)	(0.44)
Norn SVLR context	1.89^{***}		2.21^{***}	1.99^{***}
	(0.52)		(0.49)	(0.47)
Norn tenseness	3.90^{***}	3.98^{***}	4.04^{***}	
	(0.39)	(0.39)	(0.39)	
ON [a]	-0.12	-0.05	-0.26	0.65^{*}
	(0.31)	(0.32)	(0.30)	(0.26)
ON [e]	0.13	0.11	-0.16	0.44
	(0.39)	(0.39)	(0.38)	(0.33)
ON [o]	-0.78^{*}	-0.80^{*}	-0.58	-0.01
	(0.37)	(0.38)	(0.36)	(0.32)
ON [u]	-1.97^{***}	-1.95^{***}	-1.69^{***}	-1.00^{**}
	(0.43)	(0.43)	(0.41)	(0.37)
ON [y]	-0.89	-0.93	-0.77	-0.05
	(0.48)	(0.49)	(0.47)	(0.42)
ON long vowel	1.32^{***}	1.45^{***}		1.71^{***}
	(0.24)	(0.24)		(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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