Stress in Munster Irish

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Roadmap

- Goals
- Dialects
- Phonological phenomenon
- Key analytical issue: /ax/
- Current analyses of stress and /ax/
- Phonological evidence
- Phonetic evidence
- Theoretical Implications
- Experiment
- Future Work
- Acknowledgements
- References

No recent metrical theory accounts for Munster Irish stress.

Project Goals

- Evaluate evidence for word level metrical structure

- Determine where phonetic stress falls
  - relation to metrical structure

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Gaeltachtai
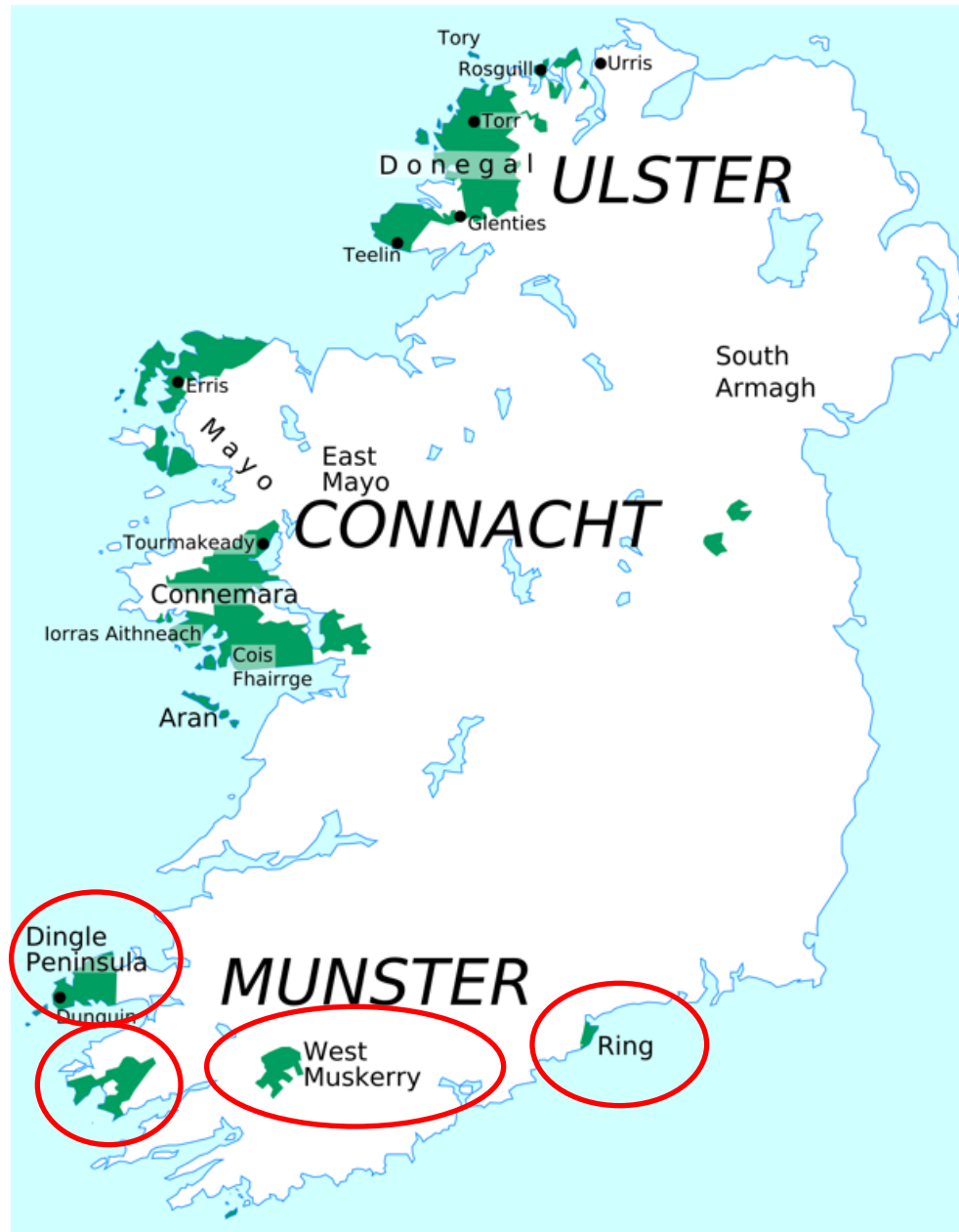
Dialectal Stress Patterns

Dialect	Initial default	V:/VV attraction	Reduction	CVCax(t)
Ulster	ˈCVCV	ˈCV:CV ˈCVVCV	ˈCVCə	ˈCV.Cax(t)
Connacht	ˈCVCV	ˈCVCV: ˈCVCVV	ˈCVCə	ˈCV.Cax(t)
Munster	ˈCVCV	CVˈCV: CVˈCVV	ˈCVCə	CV.ˈCax(t)

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Munster Irish

Doherty (1991), Green (1996), Hickey (2011, 2014), Iosad (2013), and Rowicka (1996)

1. stress attracted to heavy syllables and /ax/

2. heavy = long vowel or diphthong
   – codas don't count

Munster Patterns

1. Default: leftmost

ˈso.ləs	ˈga.livʲ	ˈtəi.lə.kə	ˈa.lə.gar

2. Vː/VV: rightmost

ˈoː.ləs	ga.ˈdiː	paːsʲ.ˈtʲiː	ˈlʲaʊ.ər	lʲaʊ̯.ˈraːn
frʲi.ˈhaː.ləv	la.pə.ˈdaːn	reː.ˈsuːn.tə	ca.lʲiː.ˈniː	buə.xə.ˈliː
sai.dʲuː.ˈrʲiː				

/ax/

- **attracts stress**: fə.ˈnaxt

- in 2ⁿᵈ syllable only: fi.ˈnax.tənʲ   ˈcos.tə.sax   slisʲ.ˈnʲa.xə

- leftmost stressed: ˈlʲax.təx   bar.ˈhax.təx

- beaten by Vː/VV : ˈeːnəx

The Key Analytical Issue

Ternary quantity distinction

– [VV], [V:] > [ax(t)] > [V]   (Doherty 1991,
                                                                  Bennett 2012/5)

– Middle "weight" segmentally specific

• nucleus must be [a], following consonant must be [x]

– elsewhere, [x] can appear in coda or onset

▪ [raxt], [xaik]

Analyses

Quantity determined by moras (μ)   (Hayes 1995, a.o.)

- CV(C) =1μ, C/ax(t)/ =2μ, CV:/CVV =3μ

Can a vowel bear three moras?

- Rowicka (1996)
- Green (1996)
- Bye (1997), Remijsen & Gilley (2008)
- Iosad 2013

Problems with the Moraic Account

relies on [ax] being heavier than CVC,

but lighter than CVː/CVV.

in CV.Ca.xV…

1. [x] onset of third syllable,

stress attraction to second syllable: [slisʲ.ˈnʲa.xə]

2. second CV heavier than all other CVC syllables

Alternative

Quantity influenced by sonority

- [a] is most sonorous vowel, attract stress (de Lacy 2004)

- [x] is [+approximant], allowed in the nucleus (Bennett 2015)

Interim Summary

- [ax] not predicted by moraic theory (e.g. Hayes 1995)

- de Lacy (2004)'s sonority driven stress does not explain [ax]

Vowel Reduction

Unstressed vowels reduce to [ə]

– Green (1996), Iosad (2013)

• Except in the initial syllable of

CVCVCVː
la.pə.ˈdaːn

Phonological Evidence

- Vowel Reduction

- Morpho-phonological stress sensitive allomorphy
  - Bennett (2015)

- Name truncation

- Intonation pitch accents

Phonetic Evidence

- ## Ulster and Connacht
  - Bennett (2012), Elfner (2012)

- ## Munster impressionistic
  - including Vowel Reduction
  - No acoustic work

Why Worry?

- Compelling evidence for metrical structure is complex (de Lacy 2014)

- Impressionistic evidence has failed before
  - Sonority-driven stress (Shih 2016)

Experiment Proposal

Does /ax/ attract stress away from initial position?

- Competing Hypotheses: **ˈCV.C/ax/   vs.   CV.ˈC/ax/**

- Surface shapes
    - non-wug

1.	CVx.Cəx	baseline
2.	CVC.Cax	stressed /ax/ properties
3.	Cax.Ciː or Cax.Cuː	unstressed? compare to (2)
4.	CəC.Caː	affect on [a], compare with (2)

Two Frame Sentences

- introduce new information (focus)

- repeat old information (not focused)   (Shih 2016)

  a. Tá _____ go maith. "_____ is good."
  b. Can _____ go ciúin. "Sing _____ quietly"   (Iosad & Ní Chiosáin 2016)

- Acoustic analysis: Vowel quality (F1, F2), duration, intensity, F0, possibly others (F0 envelope, spectral tilt)

Predictions

Why these target shapes?

[ax]	Initial	Peninitial
Stressed	ˈCax.Cəx	CVx.ˈCax
Unstressed	Cax.ˈCVː	/CVCCax/→ˈCax.Cəx

- **Vowel Reduction factor**
  - almost eliminated
  - indicator of metrical head position
  - compare reductions: CəC.Cax and CəC.Caː
- **What is [x]?**
  - measure Intensity and Center of Gravity to find place and
  - [ax], [ix], [ux], and [əx]

Expectations

If [ax] attracts stress away from initial position

- [ax] in CVC.Cax vs. in Cax.CəC
    - Should have similar properties
    - intensity, quality, F0, etc.

- Should have different acoustic properties when stressed vs. unstressed
    - [ax] in Cax.ˈCVː and ˈCVː.Cax   vs.   [ax] in CVC.Cax and Cax.CəC
    - [ə] in CəC.Cax same as [ə] in CəC.Caː
    - [x] in CV.Cax different from [x] in other codas

Future Work

- Trisyllabic target words

- Secondary stress?
    - CVCVCVː

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