



Allophony-driven stress in Munster Irish

Eileen Blum

eileen.blum@rutgers.edu PhoNE 2018

http://rci.rutgers.edu/~erb102/



Background

- Impressionistic descriptions (O'Rahilly 1932, Ó Cúiv 1944, Breatnach 1947, Blankenhorn 1981, Ó Siadhail 1989, Ó Sé 1989, 2008, Gussman 2002, Hickey 2011, 2014):

- default initial stress
- coda consonants not heavy
- three-way weight distinction:

V: > /ax/ > V (Doherty 1991, Bennett 2012)

e.g. ['batə], ['soləs], [ga'di:], ['tu:tax], [bə'kax]

- **Project Goal:** Find if acoustic stress properties support described pattern

Experiment

- **Single participant:** 74, male
- **Stimuli:** total 207, both real (teanglann.ie 2013) and wug words

Word shapes: CVCV

- CV:CV CVCax
- CVCV: CaxCV
- CV:CV: CV:Cax
- CaxCV:
- CaxCax

- **Frame sentences:**

1. Dúirt Bríd an focal ____ sular imigh sí.
[du:ɾʰtʲ.bɾi:dʲ.an.fʌ.kl.____sʌ.lɪ.ɪ.mɪg.ʃi:]
"Bríd said the word ____ before leaving."

2. Abair ____ faoi d'anáil
[a.bɪʰ.____.fʷi.da.naɪʲ]

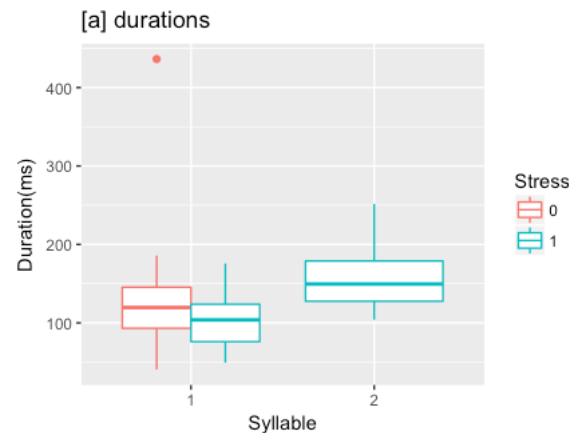
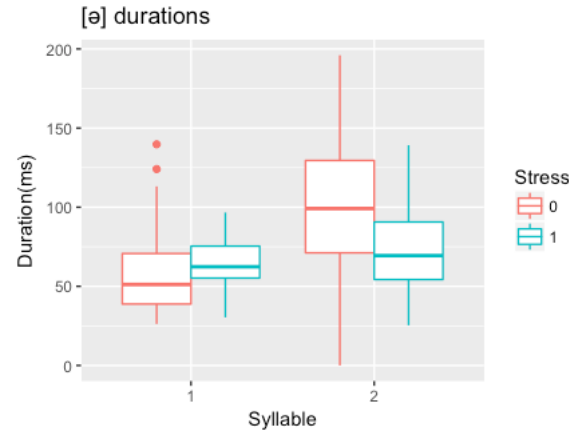
"Say ____ under your breath."

- **Acoustic Properties:** Vowels- Duration, F0, F1, F2, Intensity

Fricatives- Duration, Intensity, CoG

Results

- Students' t-tests in Microsoft Excel (p<0.01)
- Duration not correlated with described stress pattern



Major Findings:

- 1) /ax/ never reduces to [əx], even when unstressed
- 2) stress falls on initial syllable, EXCEPT in /CVCax/ words: initial vowel reduced, [Cə'kax]

Analysis

- **Constraints:**

- ALLFTL (McCarthy & Prince 1995)
- REDUCE (Crosswhite 1999, de Lacy 2006)
- *V^{LOW}X

- Unstressed short vowels reduce to [ə]...

/bata/	REDUCE	IDENT-F
(a) ('ba.tə)		*
(b) ('ba.ta)	*!	

but not before [x]

- Initial Stress...

except in CVCax

/bakax/	*V ^{LOW} X	REDUCE	TROCHEE	IDENT-F
(a) (bə.'kax)			*	*
(b) ('ba.kəx)	*!			*
(c) ('ba.kax)		*!		

Conclusion

- New acoustic evidence and preliminary statistical analysis suggest a stress pattern that differs from traditional descriptions
 - Initial stress, except CV'Cax
 - F1 and Vowel Reduction indicate unstressed short vowels
- **Future work:** multiple speakers, statistics: linear mixed effects model (Baayen, et. al 2008), coda consonants

Selected References

- Baayen, R.H., D.J. Davidson, D.M. Bates (2008); Mixed-effects modeling with crossed random effects for subjects and items; *Journal of Memory and Language* 59, 390-412
- Bennett, Ryan (2012); Foot Conditioned Phonotactics and Prosodic Constituency; PhD Dissertation, University of California Santa Cruz
- Bennett, Ryan (2015); Output optimization in the Irish plural system; *Journal of Linguistics*
- Blankenhorn, Virginia (1981); Pitch, quantity and stress in Munster Irish; *Éigse*, 18(2), 225-50.
- Blum, Eileen (2018); Allophony-driven stress in Munster Irish; Ms, Rutgers University.**
- Bowern, Claire, Barry Alpher, & Erich Round (2013); Yidiny stress, length and truncation reconsidered. *Poster presented at the 44th North East Linguistic Society*
- Breatnach, Risteard (1947); *The Irish of Ring, Co. Waterford*; Dublin Institute for Advanced Studies
- Crosswhite, Katherine (1999); Intra-paradigmatic homophony avoidance in two dialects of Slavic; *UCLA working papers in linguistics*, 1, 48-67.
- de Lacy, Paul (2006); *Markedness: Reduction and Preservation in Phonology*; Cambridge Studies in Linguistics 112, Cambridge University Press; doi:10.1017/CBO9780511486388
- Doherty, Cathal (1991); *Munster Irish Stress; Phonology at Santa Cruz*, 2, 19-30; Syntax Research Center, University of California Santa Cruz
- Gussman, Edmund (2002); *Phonology: Analysis*
- Hickey, Raymond (2011); *The Dialects of Irish: Study of a Changing Landscape*; De Gruyter Mouton
- Hickey, Raymond (2014); *The Sound Structure of Irish*; *Empirical Approaches to Language Typology*, 47, De Gruyter Mouton
- McCarthy, John, & Alan Prince (1995); *Faithfulness and reduplicative identity*; *Linguistics Department Faculty Publication Series*, 10
- Ó Cuív, Brian, (1944); *The Irish of West Muskerry, Co. Cork*; Dublin Institute for Advanced Studies
- O'Rahilly, Thomas (1932); *Irish dialects past and present: With chapters on Scottish and Manx*; Dublin institute for advanced studies.
- Ó Sé, Diarmuid (1989); *Contributions to the Study of Word Stress in Irish*; *Ériu*, 40, Royal Irish Academy
- Ó Sé, Diarmuid (2000), *Gaeilge Chorca Dhuibhne (in Irish): Institiúid Teangeolaíochta Éireann*, Dublin
- Ó Sé, Diarmuid (2008); *Word Stress in Munster Irish*; *Éigse*, 36, 87-112
- O'Siadhail, Micheal (1989); *Modern Irish: Grammatical structure and dialectal variation*; Cambridge University Press.
- Shih, Shu-hao, (2016); *On the existence of sonority-driven stress: Gujarati*; *Qualifying Paper*, Rutgers University
- Teanglann.ie (2013); *Pronunciation Database, Dictionary and Language Library*; Foras na Gaeilge, <http://www.teanglann.ie/en/fuaim/>
- Windsor, Joseph (2016); *Prosodic evidence for the constituency of Demonstratives in Irish*; *proceedings of the Canadian Linguistics Association*
- Windsor, Joseph, Stephanie Coward, & Darin Flynn (2018); *Disentangling Stress and Pitch Accent in Munster Irish*; *Proceedings of the 35th West Coast Conference on Formal Linguistics*, ed. Wm. G. Bennett et al., 430-437. Somerville, MA: Cascadilla Proceedings Project.