

Nuclear Stress – can it improve intelligibility?

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Concurrent Objectives

Describe our research project

- The aim
- The context
- The methodology
- The results
- Our conclusions

Describe doing our project

- Our aim
- Our context
- Our methodology
- Our results
- Our conclusions

Overall Aims

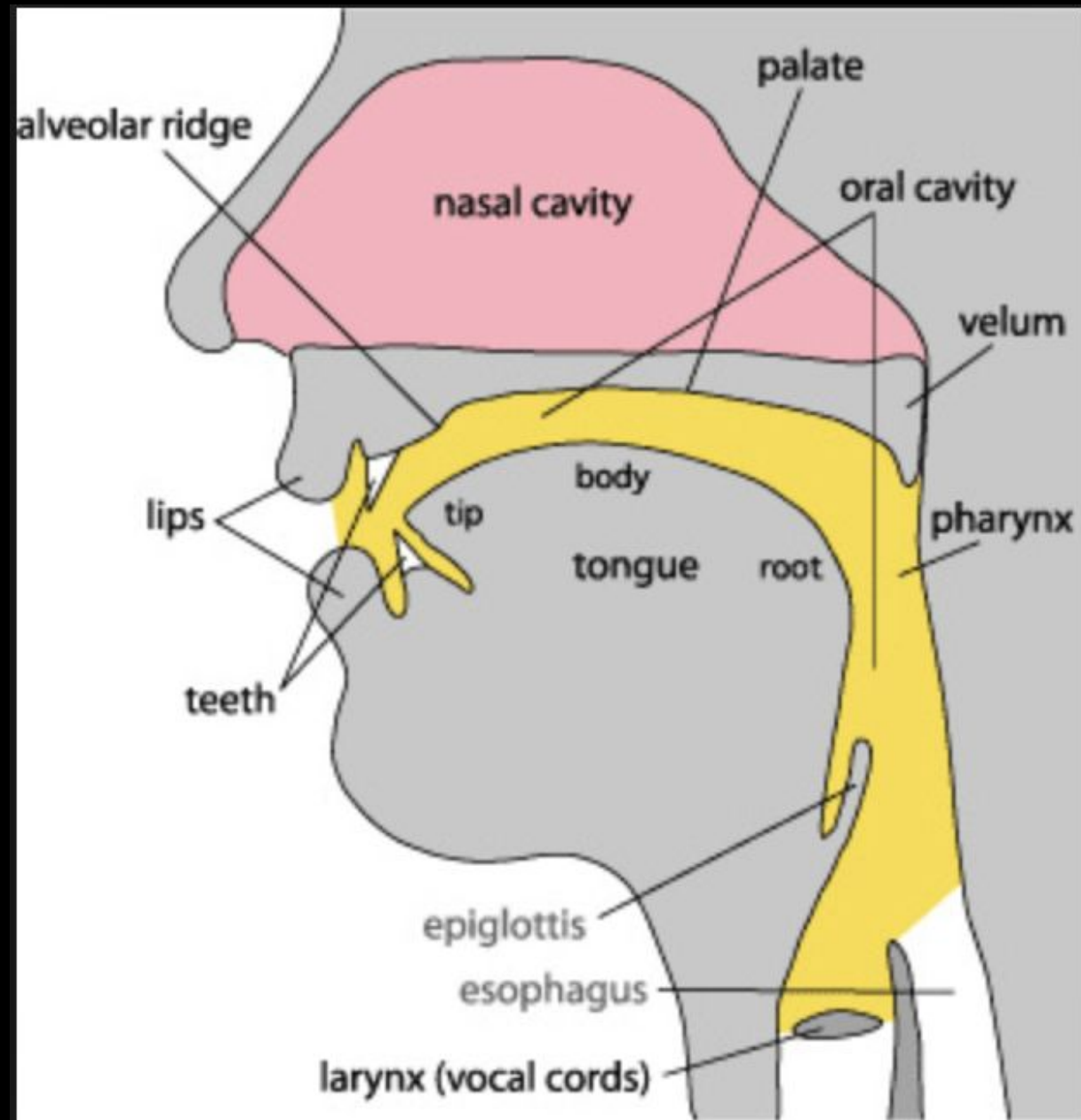
- To see if we could help our students improve their pronunciation
- To see if we could do a small scale research project that used statistics

Why pronunciation?

This idea borrowed from Ciaran Murphy's excellent talk on dictations yesterday

- What is it?
- Where would you expect to see one?
- How would you feel if you came face to face with one?

ɪ	I	ʊ	u:	Iə	eɪ	ɪ	X
e	ə	ɜ:	ɔ:	ʊə	ɔɪ	əʊ	
æ	ʌ	ɑ:	ɒ	eə	aɪ	aʊ	
P	b	t	d	tʃ	dʒ	k	g
f	v	θ	ð	s	z	ʃ	ʒ
m	n	ŋ	h	l	r	w	j



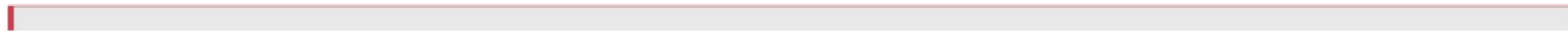
Teaching Pronunciation

Strongly disagree

It is important to help students with their pronunciation



I feel confident in my ability to teach pronunciation



I regularly teach pronunciation as part of my lessons



Strongly agree

Is it just me...

- In two studies in Canada, teachers reported regularly teaching pronunciation (Breitkreutz, Derwing, & Rossiter, 2001; Foote, Holtby, & Derwing, 2011)
- Studies in Greece (Sifakis & Sougari, 2005) and Cyprus (Hismanoglu 2010) also reported similar findings.
- However, these studies used teacher self-reports which do not always provide a reliable account of what happens in the classroom (Baker & Murphy, 2011, p.33).
- Studies that used classroom observations in addition to teacher surveys found pronunciation instruction occurred less frequently than claimed by teachers (Foote, Trofimovich, Collins, & Urzúa, 2016)
- and to be reactive to student errors rather planned as part of the lesson (Baker & Murphy, 2011).

Why might this be?

- Low confidence due to inadequate training
(Baker, 2014; Foote et al., 2011; Macdonald, 2002; Thomson, 2012),
- Poorly defined curricula and goals
(Baker & Murphy, 2011; Breitzkreutz et al., 2001; Lim, 2016)

Pronunciation is important

employment opportunities can be affected by negatively perceived pronunciation (Jenkins, 2005)

pronunciation is the most common cause of communication breakdowns (Jenkins, 2002)

some students are unable to notice pronunciation difficulties without help (Derwing & Munro, 2005)

several studies have shown that students want more of it (Couper, 2003; Derwing, Diepenbroek, & Foote, 2012)

Teaching Pronunciation helps

- Experiments in which participants received instruction in suprasegmental features showed statistically significant improvements in intelligibility (Derwing et al., 1998; Derwing & Rossiter, 2003; Munro & Derwing, 1999).
- A meta-analysis also found positive improvements where participants had lessons and feedback in segmental and suprasegmental features (Lee et al., 2015).

- So that's the context for the research question
 - Can we improve our students' pronunciation?
- Now, the context for doing the research project

Irish Research Scheme for Teaching

- An independent research scheme supporting teaching in Ireland -



Personal context

I like ideas

I especially like big ideas

I'm not great on details

**AH, SURE IT'LL BE
GRAND!**



DIFC

UNIVERSITY
FOUNDATION
PROGRAMME



Isobel

Methodology

- One pronunciation teaching approach
- Have two groups - one control group, one treatment
- Collect recordings pre and post treatment
- Measure to see if there was any improvement

SHEPPARD, B.E., ELLIOTT, N.C. and BAESE-BERK, M., 2017.
Comprehensibility and intelligibility of international student speech:
Comparing perceptions of university EAP instructors and content
faculty. *Journal of English for Academic Purposes*, 26, pp. 42-51.

Shameless plug

ELT Research Bites



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Comprehensibility and Intelligibility of International Student Speech

🕒 July 3, 2017 👤 [Stephen Bruce](#) 💬 [2 Comments](#)

Reading Time: 4 minutes

This study took place in the US against the backdrop of increasing numbers of international students. The concern of the researchers seems to be that international students in US universities might be perceived differently by EAP teachers as compared to their subject teachers (e.g. a Biology lecturer or a History tutor).

The teaching intervention

- Jenkins (2000) proposed ELF - English as a Lingua Franca
- ELF emphasises intelligibility above replicating native speaker norms.
- Jenkins stresses the importance of nuclear stress which she describes as “crucial for intelligibility” (2000, p. 153).
- The essential idea of nuclear stress is that within extended utterances, a speaker will stress one syllable within that utterance to give it prominence, to convey that this syllable (and word) are the most important for the listener to pay attention to.

The teaching intervention

- The idea is that nuclear stress has a communicative function
- Jenkins emphasises the ‘teachability’ of nuclear stress. The choice of where to place nuclear stress is not determined by a rule - instead it is the choice of the speaker who is directing the listener to the most important part of their speech by stressing it.
- Therefore, teaching nuclear stress does not require a knowledge of phonemic script on either the part of the student or teacher, and can be easily built into lessons, both receptively and productively (Jenkins, 2000, p. 155).

In other words, here's what it all boils down to:

Placing prominence on a particular syllable draws a listener's attention to it. If a speaker places prominence on something he/she DID NOT INTEND to draw attention to, his/her listener is likely to be lost.

Laura Patsko
ELF Pronunciation

“My name is Sun and I decided to study accounting in ???????
university”

The teaching intervention

- Basically an add on
- After a listening task
- Students get transcript
- Mark pauses/divide into thought groups
- Underline where they think stress would be
- Listen back
- Discuss
- Homework

- <https://elfpron.wordpress.com>

- Laura Patsko



Data Collection

- 18 students (10 in the treatment, 8 in the control)
- Recording them pre-treatment
- Teaching intervention for 6 weeks
- Recorded them again post treatment
- Raters then listen and evaluate intelligibility



Stephen



Isobel



Stephen

Numbers

We had 72 recordings

Each one about 30 seconds long

We needed each one to be listened to 5 times

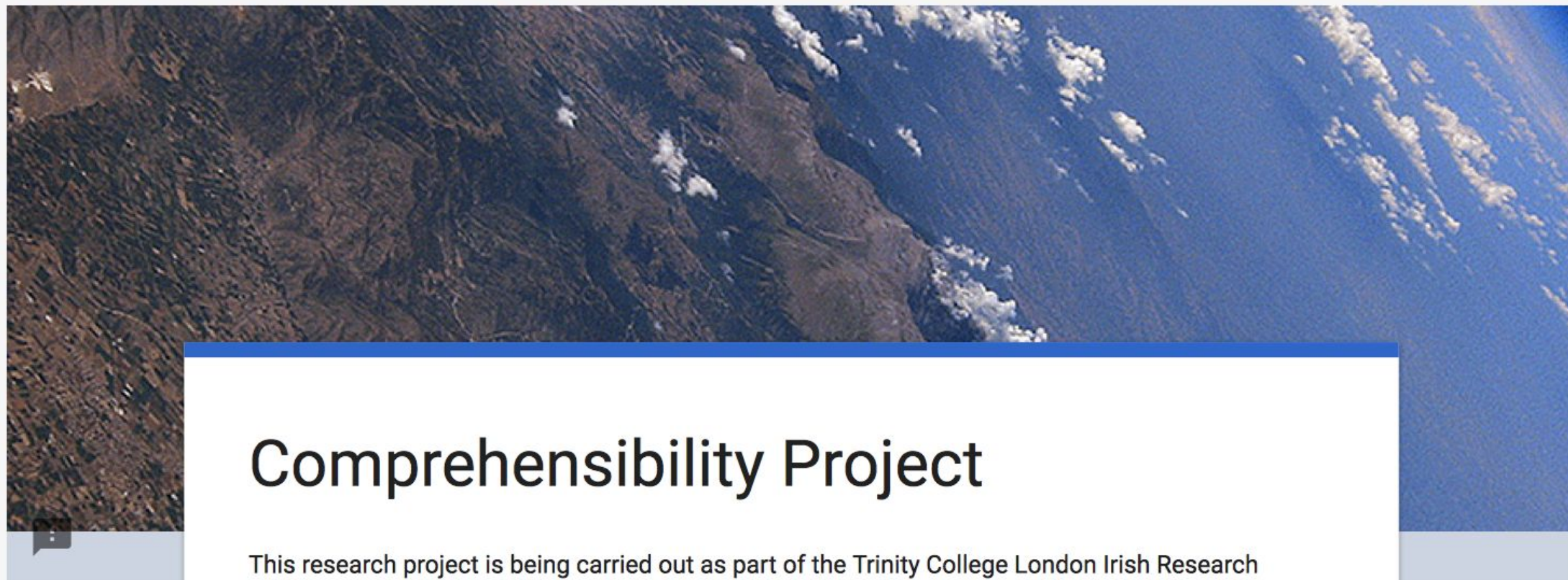
So that meant a minimum of 360 listens

We figured 14 recordings was all one person could listen to

So that meant we needed 26 raters

But the recordings had to be listened to in a random order

So that meant we needed 26 individual data collection instruments



Comprehensibility Project

This research project is being carried out as part of the Trinity College London Irish Research

Source:

<https://docs.google.com/forms/d/e/1FAInOLSfH459YmsAkVAx>

Web Viewer [Terms](#) | [Privacy & Cookies](#)

The results

	Mean	Standard Deviation	Minimum	Maximum
Read Aloud Treatment Group	4.55	1.47	1	9
Read Aloud Control Group	4.56	1.52	1	9
Question Response Treatment Group	6.35	0.81	3	9
Question Response Control Group	5.50	1.61	1	9

The results

	Mean Pre Treatment	Mean Post Treatment	P Value	T score	df
Treatment Group	5.45	5.25	0.68	-0.413962	19
Control Group	5.03	5.06	0.92	0.099373	15

The results

P values a lot more than 0.05

Therefore, results are not significant

The teaching intervention had no effect on Ss' intelligibility

Intelligibility is a bit of an issue for our students

The results for us

We're a lot better at doing statistical analysis

We have developed a pretty good tool for pronunciation research

We can better read this kind of thing

Results

The return to independent functional status at hospital discharge occurred in 29 (59%) patients in the intervention group compared with 19 (35%) patients in the control group ($p=0.02$; odds ratio 2.7 [95% CI 1.2–6.1]). Patients in the intervention group had shorter duration of delirium (median 2.0 days, IQR 0.0–6.0 *vs* 4.0 days, 2.0–8.0; $p=0.02$), and more ventilator-free days (23.5 days, 7.4–25.6 *vs* 21.1 days, 0.0–23.8; $p=0.05$) during the 28-day follow-up period than did controls. There was one serious adverse event in 498 therapy sessions (desaturation less than 80%). Discontinuation of therapy as a result of patient instability occurred in 19 (4%) of all sessions, most commonly for perceived patient-ventilator asynchrony.

Conclusions

The intervention was too short?

The intervention was too narrowly focused?

The teacher (me) wasn't that good?

Improvements at this level are hard won?

Conclusions

- Doing research on your own is tough
- Doing research with other people can be very enjoyable

Thanks

Cliona Wrynn – our boss who financed the coffees

Ben Beaumont – our supervisor who gave us guidance & feedback

Dorota Bruce – our randomizer

The Participants – our students

The Raters – our colleagues & friends

Chris Farrell – our taskmaster

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Thanks for listening