English dental fricative substitutions by Swiss L2 learners

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Introduction

Swiss Germans use a plethora of sounds for the dental fricatives /θ/ and /ð/ when speaking English

L2 English; very well studied
substitution of sounds – replacing unknown phonemes

Depending on substitution

- *t+ language (Russian, Dutch, Polish)
- *s+ language (German, Austrian, Japanese) (Lombardi, 2003)

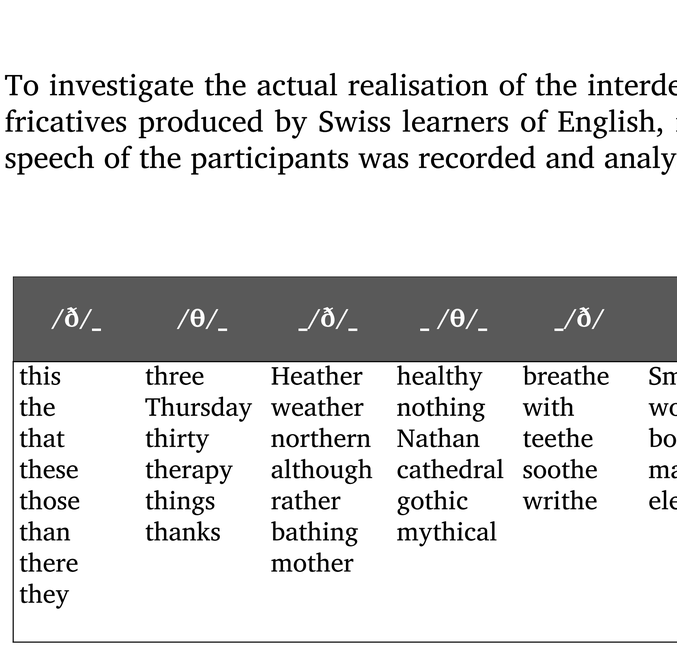
Variation in L1 (th-fronting)

Swan (2001) argues – Swiss German can be seen as an *s+ language similar to German and Austrian

We expected that

- most learners would substitute the target sound with a sound that is most familiar to them, probably [d] or [f] (based on our anecdotal impressions)

The following map presents the most uncommon consonants of 600 analysed languages.



The WALS (Dryer & Haspelmath, 2013)

From: https://wals.info/feature/19A#2/29.3/140.5

Methods

To investigate the actual realisation of the interdental fricatives produced by Swiss learners of English, read speech of the participants was recorded and analysed

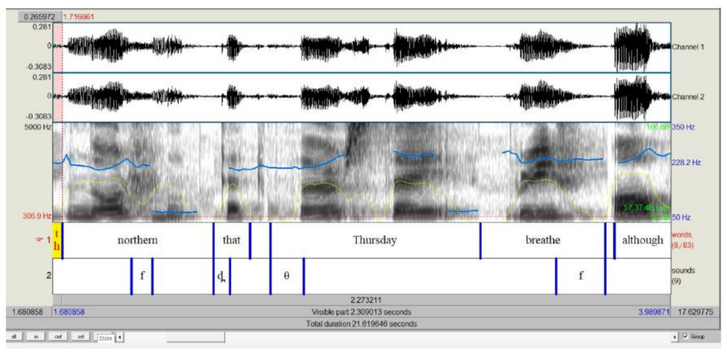
/ð/_	/θ/_	_/ð/_	_/θ/_	_/ð/	_/θ/
this	three	Heather	healthy	breathe	Smith
the	Thursday	weather	nothing	with	worth
that	thirty	northern	Nathan	teethe	both
these	therapy	although	cathedral	soothe	math
those	things	rather	gothic	writhe	eleventh
than	thanks	bathing	mythical		
there		mother			
they					

The participants consisted of

- 45 students from two Swiss grammar schools in the Canton of Bern.
- first and last year grammar school students (aged between 14 – 20)

The procedure

- participants recorded in a sound attenuated booth
- the data was analysed auditorily and if necessary acoustically through PRAAT



Results

Overall, the results highlight that voiceless dental fricatives are more often produced target like than the voiced counterpart.

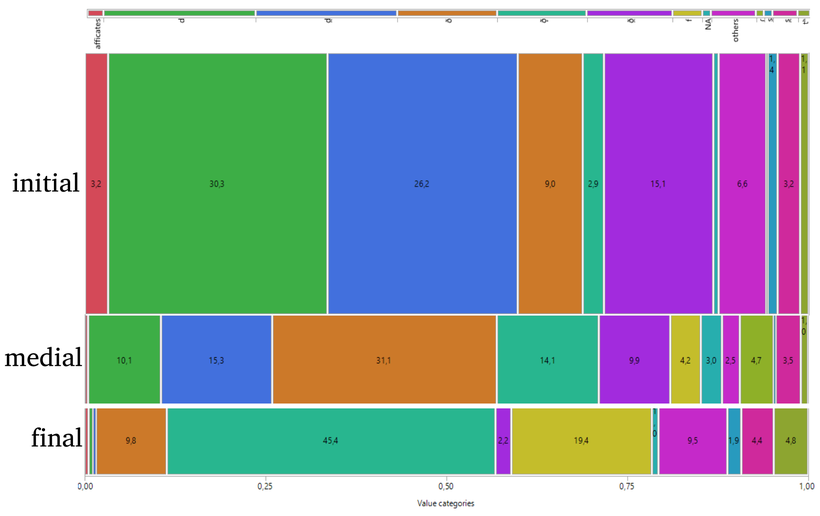
Category /ð/	Frequency	Category /θ/	Frequency
d	21.1% (n = 398)	θ	38.6 (n = 330)
d̪	19.6% (n = 370)	θ̪	15.4% (n = 132)
ð	13.9% (n = 262)	f	12.6% (n = 108)
ð̪	12.4% (n = 234)	t^h	11.3% (n = 97)
ð̪	11.9% (n = 224)	s	6.2% (n = 53)
others	6.2% (n = 117)	s̪	4% (n = 34)
f	4.1% (n = 78)	θ̪	3.9% (n = 33)
s̪	3.4% (n = 65)	affricates	2.9% (n = 25)
affricates	2.2% (n = 42)	d	1.7% (n = 15)
t^h	1.7% (n = 32)	others	1.4% (n = 12)
NA	1.3% (n = 24)	d̪	1.1% (n = 10)
s	1.2% (n = 23)	NA	0.7% (n = 6)
ɾ	1.1% (n = 21)		
Total	**100% (n = 1890)**	**Total**	**100% (n = 855)**

Concerning the phonological environment, the realization of target sounds shed a better light onto the distribution.

- the substitution of the voiced and voiceless dental fricative varies depending phonological context

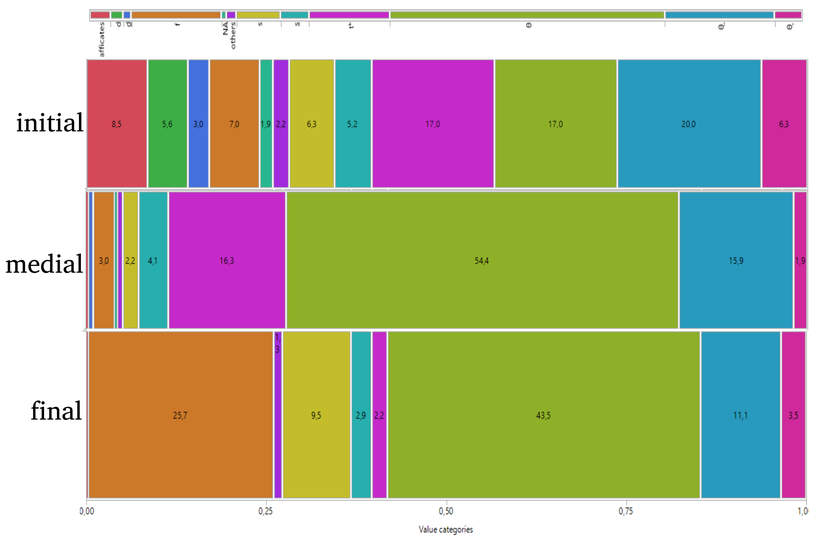
The following chart presents the voiced dental fricative and its substitutions.

- in initial position, target like pronunciation seems to be most difficult



The second chart presents the realisation of the voiceless dental fricatives.

- in medial position the target sound is most frequently produced
- in initial position the voiceless dental fricatives are most frequently substituted



Discussion / Conclusion

Swiss German learners of English produce predominantly [f] and [t^h] or [s] for /θ/

- which stands in contrast to a previous study (Swan, 2001)

The voiced counterpart → more frequently realised as [d], [d̪], [f] or [s̪]

- trends found by Dutch learners of English (Hanulíková & Weber, 2010)

Swiss German → a *t+ language – or even an *f+ language

A learner's individual style – i.e. a learner's preferred way of processing information

Factors such as motivation, aptitude, personality and belief (Ellis, 2004) → influence pronunciation

- this needs to be further analysed

References

Dryer, Matthew S. Haspelmath, Martin (eds.) 2013. The World Atlas of Language Structures Online. Leipzig: Max Planck Institute for Evolutionary Anthropology. (Available online at http://wals.info, Accessed on 2018-11-30.)

Ellis, R. (2004). Individual Differences in Second Language Learning. In A. Davies, & C. Elder, *The Handbook of Applied Linguistics* (pp. 525 - 551). Malden (MA): Blackwell Publishing.

Hanulíková, A., Weber, A. 2010. *Production of English interdental fricatives by Dutch, German, and English speakers.* Retrieved from ResearchGate: https://www.researchgate.net/publication/50809673_Production_of_English_interdental_fricatives_by_Dutch_German_and_English_speakers

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