

New Sounds 2016 – Aarhus (Danmark)

# Disentangling French tongues in a German classroom

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Labex **EFL**



# Introduction

- Pronunciation of a foreign language
  - not an intuitive task to accomplish
  - needs correct input (Flege, 2009)
  - training and feedback (Kartushina et al. 2015)
- Improvement of L2 pronunciation
  - aware of the differences that exist between a learners' L1 and L2 (Wrembel, 2007)
- Learners' production corpora
  - whether improvement was achieved over time
  - whether differences between two groups are noticeable

# German consonantal system

- red highlights: which consonants are not phonemic in standard French
- this communication presents /h/ production in L2 speech

CONSONANTS (PULMONIC)

	Bilabial	Labiodental	Dental	Alveolar	Postalveolar	Retroflex	Palatal	Velar	Uvular	Pharyngeal	Glottal
Plosive	p b		t d					k g			ʔ
Nasal	m		n					ŋ			
Trill									R		
Tap or Flap											
Fricative		f v		s z	ʃ ʒ		ç	x	χ		h
Lateral fricative			ɬ ɮ								
Approximant							j				
Lateral approximant			l								

Where symbols appear in pairs, the one to the right represents a voiced consonant. Shaded areas denote articulations judged impossible.

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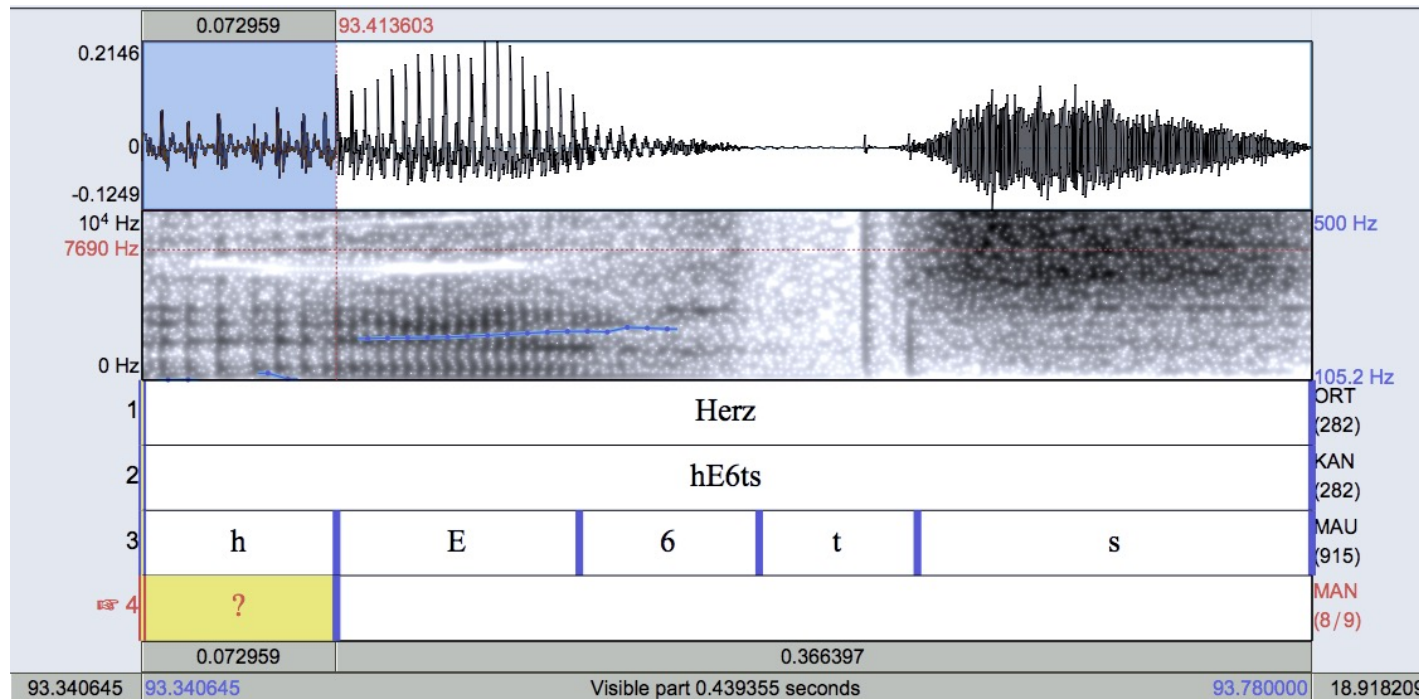
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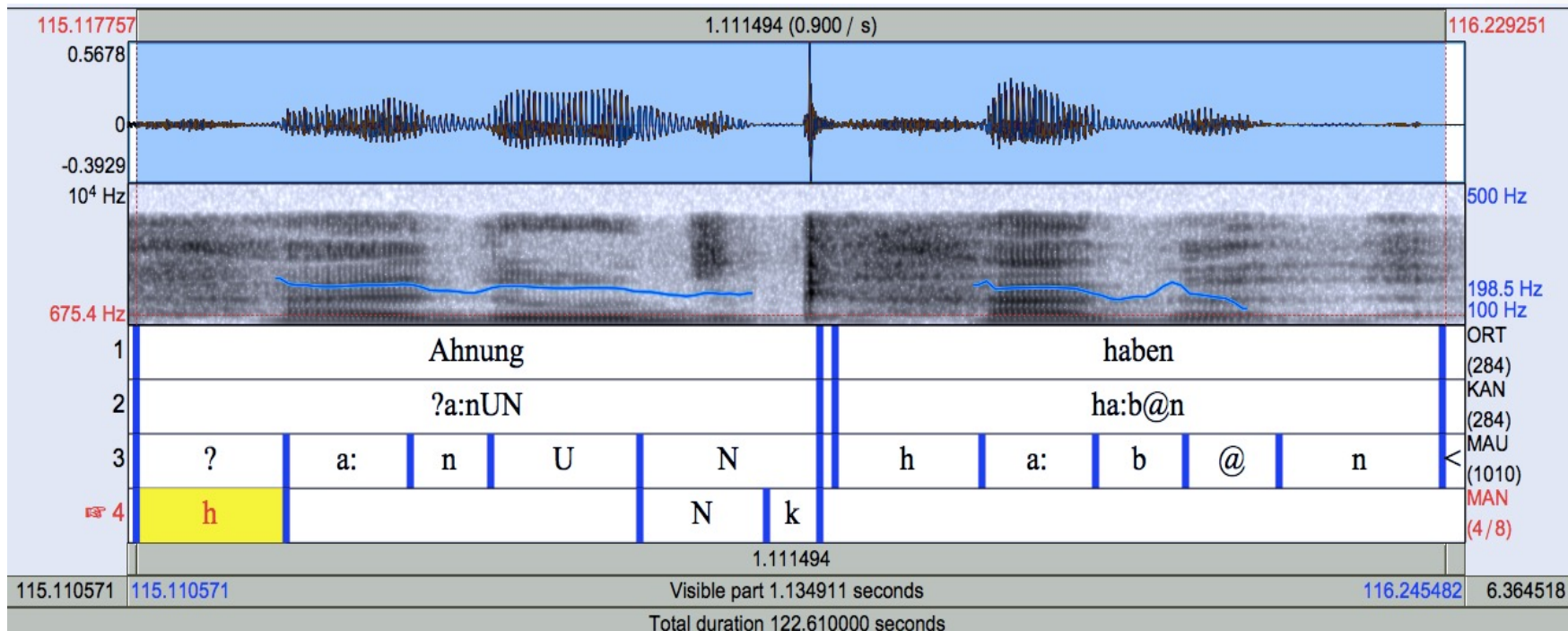
# /h/ deletion / substitution

- *Herz* (heart) – canonical pronunciation: /<sup>h</sup>hɛəts/
- pronunciation of the learner: [<sup>h</sup>?ɛəts]



# /h/ insertion

- *Ahnung haben* (have [an] idea)  
canonical pronunciation: /<sup>l</sup>?a:nʊŋ /
- pronunciation of the learner: [<sup>l</sup>ha:nʊŋk]



# Corpus

- FLACGS Corpus  
(French Learners Audio Corpus of German Speech)
- 20 German native speakers, 20 German non-native speakers
  - to identify difficulties French native speakers might have in producing German speech
- ProFee-FLACGS Corpus  
(Progression and Feedback - French Learners Audio Corpus of German Speech)
  - assess progression over one University semester
  - what does progression in L2 speech look like?
    - what features
    - ceiling effects?

# ProFee-FLACGS Corpus

- 30 first year students, majoring in German and French
- between 17 and 21 years old
- all French dominant
- 5 German native speakers

Audio + Visual Input  
(Spectrograms)

Audio Input only

Reading

Description

Reading

Description

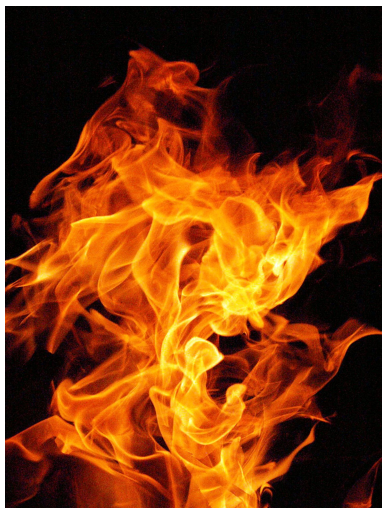
Sep.

Oct.

Nov.

Dec.

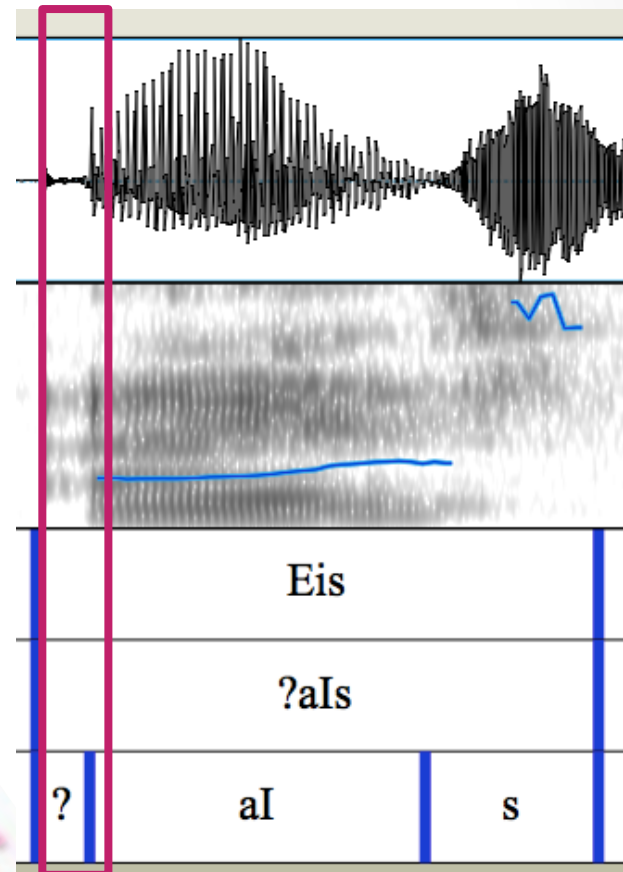
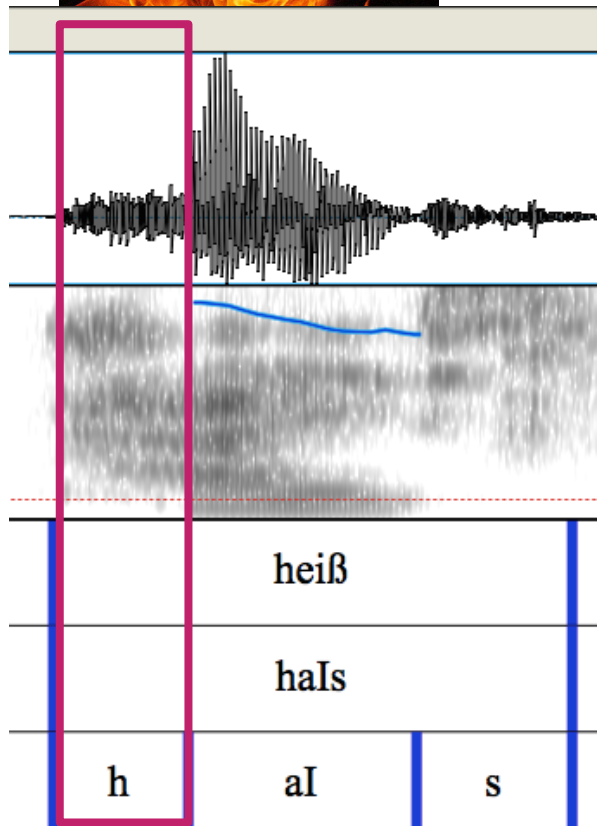
Teaching Period (First semester 2015)



/h/ et /ʔ/



# /h/ et /?/

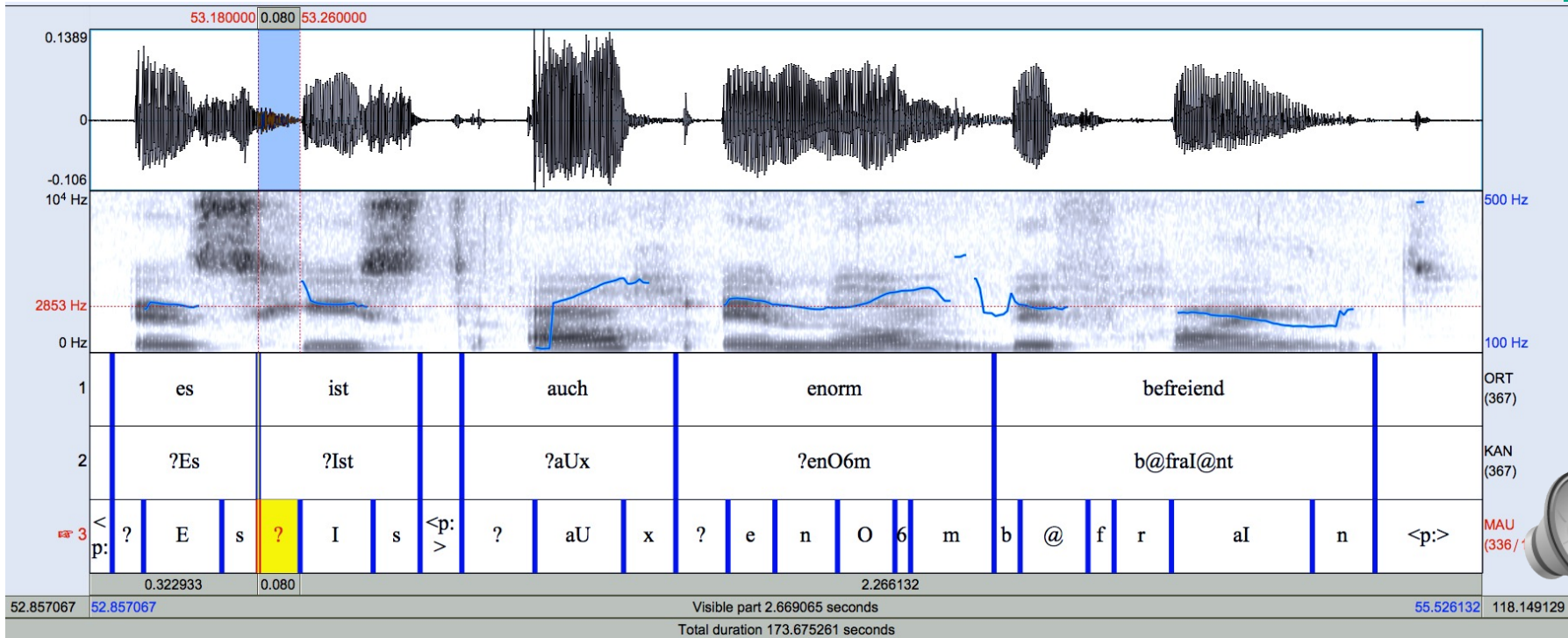


# Methods

- Audio files were sent-in by the students
- Manual transcription – German orthography
- Automatic alignment with the *Munich Automatic Speech Segmentation* (MAUS) web-service

[https://clarin.phonetik.uni-muenchen.de/  
BASWebServices/#/services](https://clarin.phonetik.uni-muenchen.de/BASWebServices/#/services)









53.180000 0.080 53.260000

1	es	ist	auch	enorm	befreiend	ORT (367)
2	?Es	?Ist	?aUx	?enO6m	b@fraI@nt	KAN (367)
3	<p: ? E s ? I s <p:>	? aU x ? e n O 6 m b @ f r a I n <p:>	MAU (336 / 1)			

53.180000 0.090 53.269797

1	es	ist	auch	enorm	befreiend	ORT (367)
2	?Es	?Ist	?aUx	?enO6m	b@fraI@nt	KAN (367)
3	<p: ? E s ? I s <p:>	aU x ? e n O 6 m b @ f r a I n t <p:>	MAU (1125)			
4	h	MAN (2 / 3)				

0.322933 0.090 2.256336

52.857067 52.857067 Visible part 2.669065 seconds 55.526132 118.149129  
Total duration 173.675261 seconds

# Canonical [h] productions

- rate of correct [h] productions of the two learner groups

<i>rate in %</i>	September		Reading	November		Reading
Group	AO	AV		AO	AV	
canonical /h/	93.6	81.1		96.5	87.8	
TOKENS	171	190		198	230	

# Canonical [h] productions

- rate of correct [h] productions of the two learner groups

<i>rate in %</i>		October			December	
Group	Picture description	AO	AV	Picture description	AO	AV
canonical /h/		97	90.8		98.9	95.3
TOKENS		165	130		94	85

# Canonical [h] productions

- rate of correct [h] productions of the two learner groups

<i>rate in %</i>	September		October		November		December	
Group	AO	AV	AO	AV	AO	AV	AO	AV
canonical /h/	93.6	81.1	97	90.8	96.5	87.8	98.9	95.3
TOKENS	171	190	165	130	198	230	94	85

Both learners' groups increase their canonical /h/ production over time

The differences between both groups decrease over time

# Deleted [h]

- rate of deleted /h/ of the two learner groups

<i>rate in %</i>	September		Reading	November		Reading
Group	AO	AV		AO	AV	
deleted /h/	6.4	18.9		3.5	12.2	
TOKENS	171	190		198	230	

# Deleted [h]

- rate of deleted /h/ of the two learner groups

<i>rate in %</i>		October			December	
Group	Picture description	AO	AV	Picture description	AO	AV
deleted /h/		3	8.2		1.1	4.7
TOKENS		165	130		94	85

# Deleted [h]

- rate of deleted /h/ of the two learner groups

<i>rate in %</i>	September		October		November		December	
Group	AO	AV	AO	AV	AO	AV	AO	AV
deleted /h/	6.4	18.9	3	8.2	3.5	12.2	1.1	4.7
TOKENS	171	190	165	130	198	230	94	85

Both learners' groups delete less /h/ over time

The differences between both groups decrease over time

# Inserted [h]

- number of inserted [h]
- number of [?]

	September		Reading	November		Reading
Group	AO	AV		AO	AV	
inserted [h]	15	8		1	10	
regular [?]	506	599		662	801	



# Inserted [h]

- number of inserted [h]
- number of [?]

		October			December	
Group	Picture description	AO	AV	Picture description	AO	AV
inserted [h]		3	2		2	1
regular [?]		416	405		508	426

# Inserted [h]

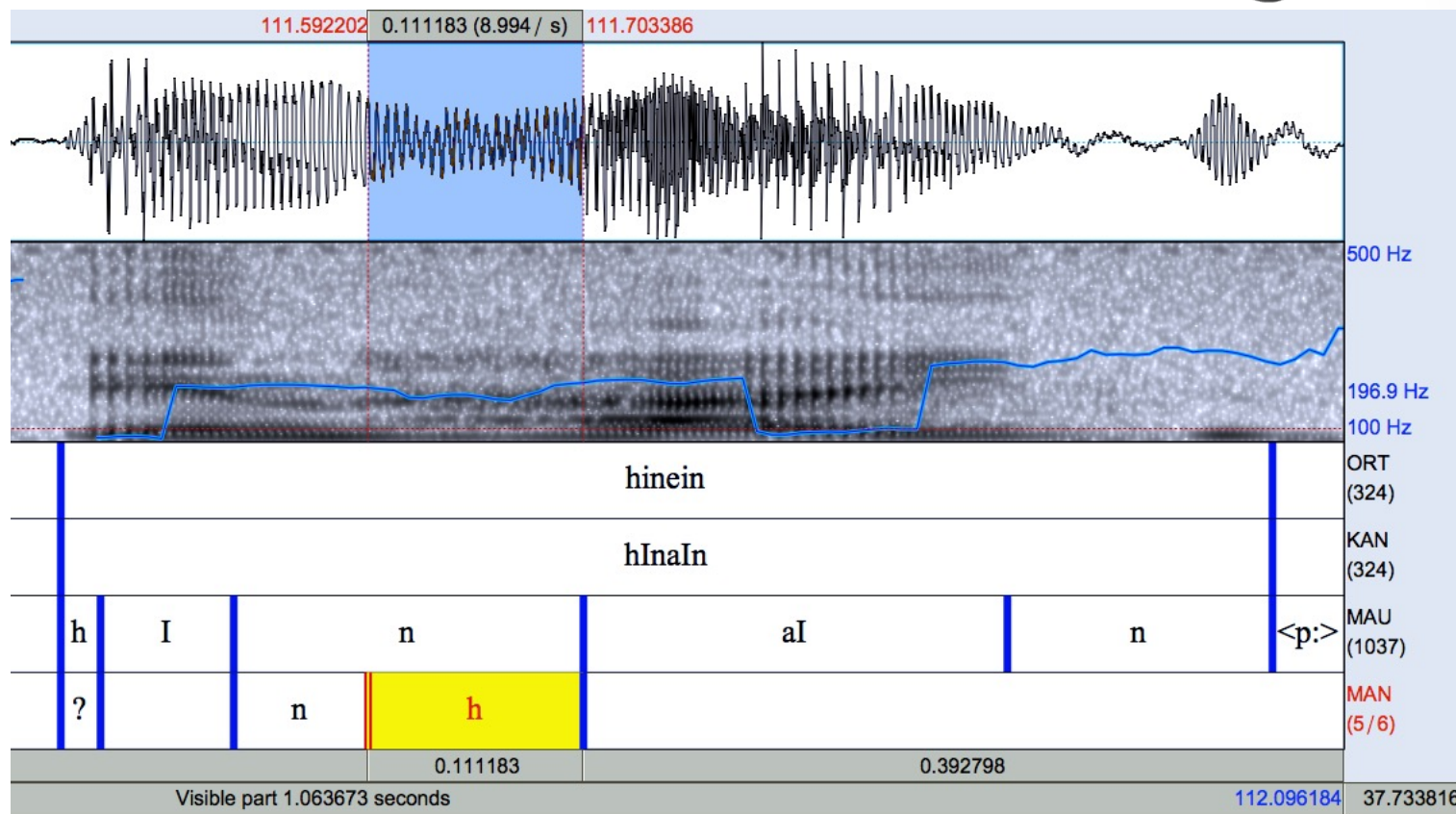
- number of inserted [h]
- number of [?]

	September		October		November		December	
Group	AO	AV	AO	AV	AO	AV	AO	AV
inserted [h]	15	8	3	2	1	10	2	1
regular [?]	506	599	416	405	662	801	508	426

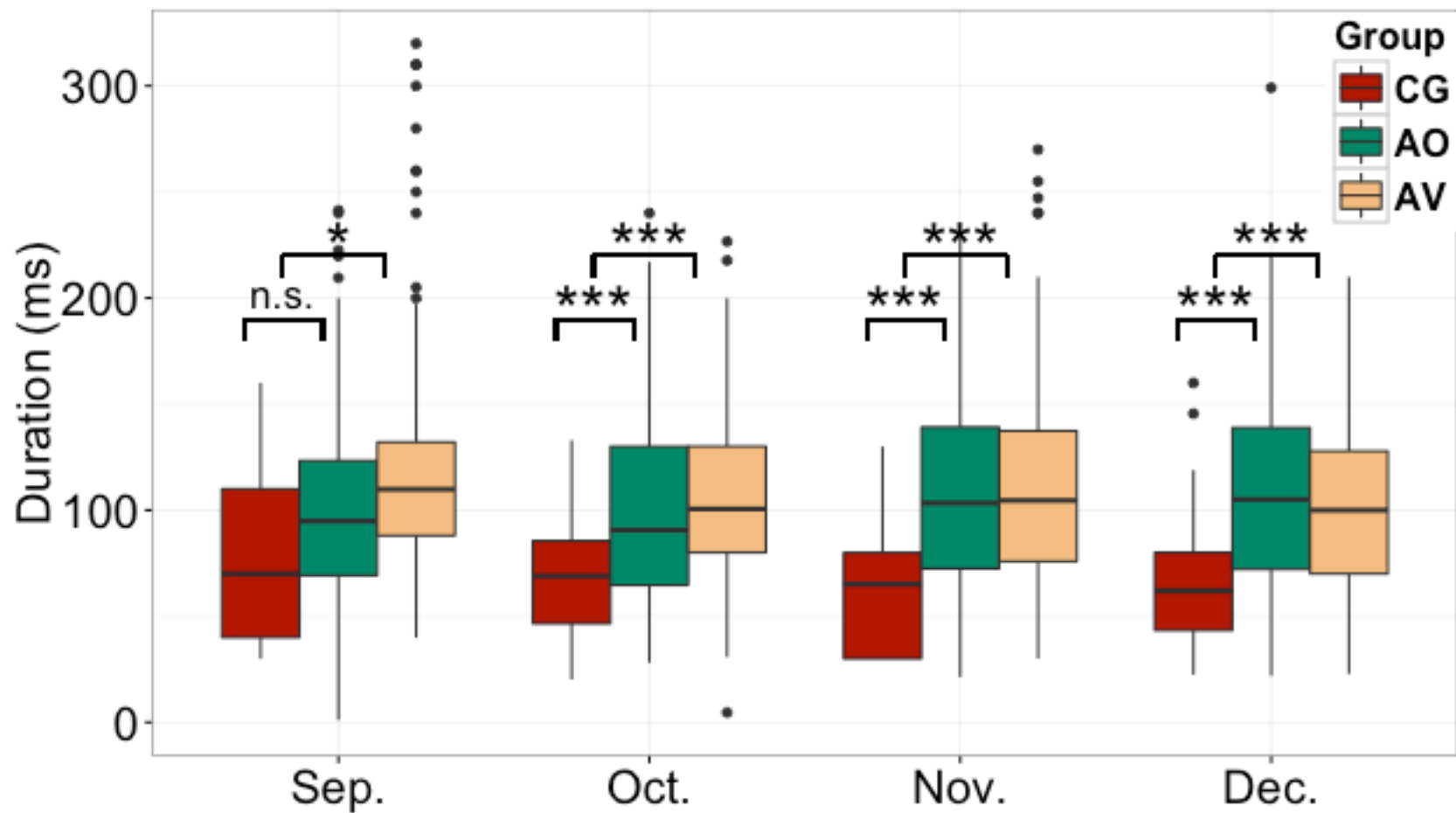
The number of inserted [h] decreases over time

There seem to be more [h] insertions in reading

# [h] insertion (in onset of #V syllables) triggered by /h/ in neighbourhood



# Durations of canonical /h/



# Conclusions & Perspectives

- after 11 weeks of training → not native like (AO and AV)
- regarding the pronunciation of /h/ → both groups made progress regarding the canonical /h/ production
  
- AV group → progress was more spectacular
- two possible reasons
  - the training was more effective
  - the AO group was closer to a ceiling effect?
  
- more features have to be analysed
  - segmentals: /ŋ/, /ç/, vowel quantity and quality
  - supra-segmentals: syllable weight and lexical stress

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Mange tak!

Thank you!

Labex **EFL**

